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REMARKS ON DIPHTHERIA, CROUP AND ALLIED AFFECTIONS WITH SPECIAL REFERENCE TO INTUBATION.*

BY WALTER A. WELLS, M. D.,

Washington, D. C.

In the report of mortality statistics just issued by the Census Bureau, for the five calendar years 1900 to 1904, we find that throughout what is known as the registration area of the United States, comprising a population of about 29,000,000, there were 43,595 deaths attributed to diphtheria, and 10,052 attributed to croup. Taken together, the deaths from croup and diphtheria were three times as numerous as the deaths recorded from scarlet fever, and more than three times as numerous as the deaths from measles, and quite equal to the number attributed to typhoid fever, for the same period and over the same area.

These deaths from croup and diphtheria were distributed by ages as follows:

	Under 1 year.	Under 5 years.	5 to 14 years.
Diphtheria,	2,451	25,024	15,968
Croup,	1,285	7,899	2,041

From which statistics it appears that about 95 per cent. of all deaths occurred in children under 15, and about 61 per cent. in children under 5.

Diphtheria is preeminently a disease of early childhood, and it must be regarded as one of the most formidable diseases of this period of life. This is further shown by the fact that, according to the census report quoted, it is responsible for one out of every 22 deaths in children under 5 years of age.

*Read before the Medical Society, Dec. 5, 1906.

As regards age, we cannot fail to be struck in the figures here given by the greater relative proportion of croup at the very youngest age, which proportion rapidly diminishes in favor of diphtheria as the age advances. For it will be noted that while under 1 year there are only 2 deaths from diphtheria to 1 from croup, between the ages of 5 and 14 years the number of cases of death from diphtheria is about eight times that attributed to croup.

Shall we believe, as these figures say, that diphtheria causes such a smaller proportion of deaths in the very young, or shall we not explain the difference by the greater difficulty of diagnosis in infants, which leads the practitioner to call many cases croup which in older children would be recognized as diphtheria?

Another evidence that the terms Croup and Diphtheria, as used in the report, are to a large extent interchangeable terms, is to be obtained from a comparison of the reports from urban and rural districts.

Taking the whole number of deaths as a basis, it appears from the reports coming from the rural districts, that about 27 per cent. of all cases were due to croup, whereas in reports from cities of 8,000 or more, croup is made responsible for only 16 per cent. of the deaths. Without doubt, the more frequent bacteriological examination now quite generally practised in the cities accounts in a great measure for the proportionately small number of cases of croup as compared with the rural districts.

As regards the mortality of diphtheria and croup when reckoned to the population, the census report gives an annual average of 33.7 per 100,000 for the entire registration area of the United States for the five years from 1900 to 1904 inclusive. The cities in the registration States gave an annual average of 42.9, while the rural part of registration States gave an annual average of 20.1 per 100,000. This difference in favor of the rural districts is not, however, strictly just, for the reason that many desperate cases are brought from the country to the city hospitals, in order that intubation or other treatment may be used as a last resort, and these cases tend to swell the mortality statistics of the city.

In the period embracing the five years between 1900 and 1904 there were 352 deaths in the District of Columbia attributed to diphtheria and croup, giving an average annual death rate of 24.3 per 100,000.

From the reports of the Health Office of the District of Colum-

bia we gather the following interesting information as regards the mortality of diphtheria from the year 1894:

Percentage of fatal cases: In 1894, 35; 1895, 24.81; 1896, 17.48; 1897, 18.87; 1898, 17; 1899, 17.59; 1900, 13.64; 1901, 12.98; 1902, 12.78; 1903, 10.94; showing an almost steady fatality from 35 per cent. in 1894 through the succeeding ten years down to about 11 per cent. in 1903.

Although the antidiphtheritic serum was discovered as early as 1890, it was not until Roux read his memorable paper before the Congress of Buda Pesth, in the year 1894, that it came to be introduced into general practice.

The very marked decrease in the mortality of diphtheria which began in the District of Columbia the very next year and has since continued, must be construed on the one hand as a splendid testimonial to the genius of Roux, Yersen, Behring and Kitasato, and on the other as an evidence of the intelligent progressiveness of the medical profession in this city which was quick to appreciate and to apply this modern triumph of serum therapy.

Before proceeding further with our subject it is necessary that we should have some understanding as to what we mean by the terms "croup," "false croup" and "true croup," and that we should clearly distinguish the conditions which they denote, from each other, and from similar affections with which they are sometimes confused.

It is quite evident that in the statistics we have been quoting, croup has been set down as the cause of death in many cases in which bacteriological examination would have proved diphtheria to be present.

For diphtheria we have a certain diagnostic criterion in the demonstration of the Klebs-Loeffler bacillus in the throat, but the meaning of croup has never been so definitely determined, and the latter term is accordingly frequently made the convenient scape-goat of our shortcomings in the diacritic art. Although the term "croup" has been thus badly misused and made to apply to affections widely varying in their natures, and although a seemingly inextricable confusion obtains as to its meaning, we believe that it is a very desirable word to retain because there are conditions for which it appears to be indispensable.

What other name can we give for the numerous cases that every one meets in practice presenting all the clinical features

of diphtheria, which microscopical examination proves, however, not to be diphtheria, and which we know does not answer to the description of false croup nor laryngismus stridulus. These cases are pseudomembranous inflammation affecting the larynx, and due to various micro-organisms such as the streptococcus, staphylococcus, pneumococcus and Friedländer's bacillus. As the specific nature of the cases is seldom determined in practice, it is very important that we have some name by which to denominate them. The term croup, which has the advantage of not committing us as regards the specific etiology of the affection, may very justly be applied to this class of cases.

Let us, then, define croup as *pseudomembranous-inflammation of the throat producing dyspnœa by involvement of the larynx.*

This we believe to be a very satisfactory definition, making of croup a generic term which includes diphtheria, and is at the same time applicable to those other cases of pseudomembranous inflammation when the Klebs-Loeffler has not been proved to be present, or even when it has been proved to be absent. When we have settled upon the above definition, there is no further need of retaining the terms "true" croup and "false" croup. By true croup is understood diphtheria ; by false croup, spasmodic laryngitis or laryngitis stridula, a form of laryngitis to which young children are prone, marked by the nocturnal occurrence of dyspnoea, but not attended with the formation of a pseudomembrane.

On account of a similarity of names, this has sometimes been confused with another affection of childhood, having an entirely different pathogenesis, viz : laryngismus stridulus.

Spasmodic laryngitis, laryngitis stridula or false croup, occurs mostly in children of five or six years of age, is accompanied by pronounced catarrhal symptoms and a characteristic loud barking cough. The paroxysms of dyspnoea occur at night and are absent during the day to return again the following night, until the patient is well of his "cold."

Laryngismus stridulus, also known as Copp's or Millar's asthma, is a non-febrile chronic affection, occurring almost exclusively in rickety children, and in whom can generally be elicited signs of either manifest or latent tetany. It seldom develops in children over two years old and it gives an extremely grave prognosis.

The attacks of dyspnoea observed in this affection are due to a laryngeal spasm, often accompanied by a sort of convulsion or

spasmodic contraction of other muscles of the body, especially of the hands and feet (carpo-pedal contractions).

Another affection of childhood which presents a picture of laryngeal obstruction and different from any of these is what is known as congenital laryngeal stridor or, as it is sometimes called, "Child Crowing."

This might be confused with laryngismus stridulus, but not with the acute laryngeal obstruction occurring in croup and spasmodic laryngitis. It is distinguished by the fact that it is present from birth, or begins in a few weeks after, and by the peculiar crowing noise which accompanies each inspiratory act. The prognosis is good, the affection generally disappearing before the age of two years.

It is not only important to distinguish croup from other diseases attended with laryngeal obstruction, but we believe it would be profitable to differentiate the various forms of croup.

Accepting for croup the definition above given, we have to consider not only as croup those pseudomembranous affections in which the bacillus of diphtheria has been proved to exist, but also those pseudomembranous affections which involve the larynx and cause obstruction, and are due to other micro-organisms.

We have pointed to the fact that many cases are set down as croup which a bacteriological examination would have proved to be diphtheria. On the other hand, there cannot be the slightest doubt that cases are diagnosed as diphtheria when it does not exist at all, or when, if present, it plays a really subordinate part in the production of the phenomena present.

In my experience as laryngologist, at the Garfield Hospital, I have been frequently called to intubate cases in the diphtheria wards which presented signs of a profound infection and a high degree of laryngeal stenosis, and in which more or less extensive pseudomembranes were to be seen in the throat, and yet in which repeated bacteriological examination failed to discover the bacillus of diphtheria.

For example, on June 10, 1902, a girl nine years of age was admitted to the Garfield Hospital Annex, with a croupy cough and a patch on each tonsil. Culture made from the latter was returned negative. That night, about 1 o'clock A. M., the respiration, already labored, became more so, and retraction of the chest and cyanosis developed. I intubated at 1.45 A. M., the

relief being perfect. The child had difficulty in swallowing, and had to be given nutrient enemata. Respiration ranged from 20 to 30; pulse 80–120; temperature 100 to 102.5; 6,000 units of antitoxin were given.

The tube was removed on the third day, and the patient recovered.

In this case, three separate cultures made at different times and sent to the Health Office for a diagnosis, were returned with the report that the bacillus of diphtheria was not to be found.

Pseudomembranous inflammation of the throat may be caused by a number of different micro-organisms besides the Klebs-Loeffler. Of these, the one which has for us the greatest clinical interest is the streptococcus, by reason of the severity of the intoxication to which it gives rise.

A streptococcus infection very frequently complicates diphtheria, and when it does the constitutional disturbance is always grave, because it appears that these two organisms act reciprocally to intensify the toxicity of each other.

In reality, contrary to the usual teachings of our text-books, the pure uncomplicated diphtheria is very mild in both its local and constitutional manifestations. The mucous membrane is but slightly inflamed, the secretions are not profuse, and the typical pseudomembrane is a whitish opaline patch, that may be dislodged from the membrane without bleeding.

The fever is low, the glands but little or not at all involved, and the general symptoms so slight that except for the patch in the throat, we should be inclined to regard the case as nothing more than a slight "cold."

When phenomena are present indicating a profound intoxication, we may with reason suspect the existence of a streptococcus infection.

Differing from diphtheria, a pseudomembranous inflammation due to the streptococcus begins abruptly, often with a chill, and the temperature is likely to be high. The glands are greatly enlarged, and show a disposition to suppurate. Suppurative inflammation of the ears is also more frequent in the streptococcic infection, and the secretion from the nose more inclined to be thick and purulent. The mucous membrane is generally much inflamed, swollen and edematous. The breath is often fetid.

The patch is also different from that due to a pure Klebs-

Loeffler culture. It is of dirty gray or yellowish color, and instead of standing in relief from the mucous membrane it looks as though a portion of the mucous membrane were macerated. At times the latter is actually gangrenous. When an attempt is made to remove the patch, it is found to be adherent and it leaves a bleeding surface.

Of complications, broncho-pneumonia and vegetative endocarditis form a part of the history of a streptococcus infection, but paralysis, never.

The various typical paralyses affecting especially the palate and the eye muscles are almost pathognomonic of diphtheria, and often constitute the sole means of diagnosis.

Another patient who presented the clinical characteristic of a streptococcic infection, was a little girl 2½ years old, whom I saw very recently in consultation with Dr. Pickford. The child was taken rather suddenly with all the symptoms usually attributed to diphtheria, including a laryngeal stenosis so great as to require an intubation.

A culture, however, sent to the Health Office, was returned with the report, "not diphtheria." Intubation was performed November 2d, giving perfect relief as far as the asphyxia was concerned; but in spite of the relief to the breathing, the child continued to be thoroughly prostrated, and seemed listless and apathetic.

That evening I received a message by telephone that the child had pulled out the tube by means of the string which had been left in place. The attending physician, Dr. Pickford, could not be found. When I arrived alone, the situation appeared to me as critical as any I have ever experienced. The poor, asphyxiated and cyanotic little patient, whose resistance was already reduced to the minimum, had now to struggle for breath, and with very poor success. The parents were rather unwilling that the tube should go back. I felt, however, that there was a chance, and so advised. The father held the child, and the tube was reinserted, not without some difficulty and delay, owing to a combination of unfavorable circumstances. The apnea was now complete, and it became necessary to resort to artificial respiration. After considerable persistence, I had the gratification of observing a return of respiration.

The profound adynamia, however, present in the case from the

beginning, continued in spite of large and repeated doses of antitoxin, and the patient died the following morning. I believe the death was due, in this case, to a poisoning of the bulbar centers by the toxines of the streptococci.

The very sudden development of a stenosis of the larynx from diphtheria, in cases which a day or so previously seemed entirely well, is a not infrequent experience in this disease, and one that must tend to make us very cautious and inclined to have a culture made upon slight suspicion.

I have notes of a case I saw in consultation with Dr. Geo. K. Baier, of a boy six years old, who, when I saw him on Nov. 4, 1905, was in a state of extreme asphyxia and cyanosis, and yet, according to the parents, was playing out of doors the previous day.

A similar case was a little Italian girl aged 4, who was admitted to the Garfield Hospital Annex Nov. 19, 3 P. M., with the history of having been apparently well until the morning of that day, when she was suddenly taken with difficult breathing. I saw her at 4 P. M.; the temperature was 103 ; pulse 132 ; respiration 34 ; extreme cyanosis and thoracic depression. Intubation gave satisfactory results.

As opposed to this, we sometimes encounter cases in which the involvement of the larynx takes place at a late stage of the disease, when we think the patient well on to recovery.

An example of this type was a case I saw in consultation with Dr. John E. Walsh, Sept. 19, 1904. The child had been ill two weeks before any signs of laryngeal stenosis developed. Patches had been observed on the palate and tonsils, and antitoxin had been administered. The difficult breathing began suddenly in the night of Sept. 16, and increased to the extent of requiring intubation.

One very important lesson that my experience with intubation has firmly impressed upon my mind, is that the occurrence of a patch in the fauces must by no means be considered as indispensable to the diagnosis of diphtheria, or other forms of croup.

The rather commonly prevailing view that we are safe as far as diphtheria goes, unless a pseudomembranous exudate can be discovered on the tonsils or pharynx, is a very dangerous error. It leads those who so believe, into a false security and to a tendency to regard as of little consequence, a laryngeal dyspnoea which may develop under such circumstances.

I have notes of a number of cases in which intubation had to be performed for the relief of a death-threatening dyspnoea, when there was absolutely no patch to be seen in the throat, and no history of any having occurred. In some of these cases, there had been a history of a cold or sore throat of some standing ; in others, the laryngeal complications had seemingly developed without warning and without an antecedent inflammation of the nose or pharynx, the so-called "croup d'emblèe" of the French.

October 6th I intubated a case for Dr. Savage of Bennings, a child, B. L., five years old, who had been sick but two days, and who, however, at the time exhibited marked stridor, with epigastric and suprasternal retraction. No patch was to be seen on any part of the fauces. Dr. Savage gave the antitoxin without waiting for the bacteriological report, which proved to be positive.

The dyspnoea was completely relieved by the operation, and the child recovered.

I recall also a very interesting case that I saw in consultation with Drs. S. S. Adams and Virgil Jackson, in which no patch was found, and in which, moreover, there was no reason whatever to suspect diphtheria, inasmuch as the little patient was at the time an inmate of one of the wards of the Children's Hospital on account of some chronic intestinal trouble from which it was suffering. It had not been, so far as known, exposed to diphtheria, and when the dyspnoea developed it was attributed to a condition of glottic edema, inasmuch as there had been in the course of the affection, evidences of edema in other parts of the body. The dyspnoea increased very rapidly and intubation became urgently necessary.

It was then that a culture taken from the throat proved that the child had diphtheria.

If laryngoscopic examinations were practiced in these cases they would nearly always demonstrate the presence of a pseudomembrane in the larynx, and thus settle the diagnosis. Unfortunately it is a very difficult undertaking in these little patients, especially under the circumstances.

A case in which a good laryngoscopic examination was possible was one I saw last June in consultation with Dr. Macatee. This child, a girl of eight years, was supposed to have had diphtheria several years previously. The present attack began with an

ordinary tonsilitis, which had been treated locally as well as internally for about two weeks, so that if any patch had been present it would not have been overlooked.

A croupy condition developed, attended with dyspnoea, which at first was present only during the night, and disappeared, almost if not entirely, the succeeding day, thus closely simulating the usual history of an ordinary spasmodic laryngitis. This peculiarity taken in connection with the history of a previous diphtheria infection, the absence of a patch and the time of year gave no ground for suspecting the presence of diphtheria.

The dyspnoea increased, however, and became continuous, and on June 4 I was called to perform intubation. First making a laryngoscopic examination, I found a distinct pseudomembranous exudate covering the posterior surface of the epiglottis and extending into the cavity of the larynx.

The dyspnoea was completely relieved by the tube. A bacteriological examination proved Klebs-Loeffler bacillus present. Patient was removed to the Garfield Hospital Annex, and ultimately recovered.

From the standpoint of intubation *per se*, it is not really of vital importance to distinguish which one of the various affections is responsible for the dyspnoea. The fact that it is present, and that it is threatening the life of the patient is a sufficient ground for its immediate utilization as a therapeutical expedient, no matter what the underlying cause of the dyspnoea may be.

A thorough familiarity, however, with the disorders causing laryngeal dyspnoea, and an accurate differentiation of one from another, is very essential from the standpoint of prognosis and treatment.

Intubation, it must be remembered, is designed only to combat one symptom of the disease—asphyxia. This may be absolutely successfully accomplished and yet the patient may succumb. The adynamia as a result of the specific intoxication, a nephritis, a myocarditis, a septic endocarditis, a pneumonia, a bulbar paralysis affecting the cardiac or respiratory centers, or some other product of the existing fundamental state, must in this event, be held responsible for the unfortunate termination.

But it is very rational to assume that any or all of these untoward accidents must be minimized by the restoration of physiological breathing, or to state it conversely, the embarrassment of

respiration, entailing as it does a deficient oxidation of the blood, and poisoning the tissue by the excess of CO_2, not to mention the strain upon the heart from the labored breathing, must lessen body resistance, and unfavorably influence the course of any other existing complication.

That the general treatment and management of the case largely depend upon an accurate diagnosis of the case, needs only to be mentioned to be accepted. Spasmodic laryngitis is simply an acute inflammatory affection of the mucous membrane, generally associated with adenoids and a catarrhal state, and causing dyspnoea either by a spasm of the glottis, or by an edematous infiltration. Its treatment is readily inferred.

Laryngismus stridulus, which depends upon an altered state of the nervous system and profound nutritional disturbance naturally requires above all things, a rational hygienic and constitutional therapy.

For diphtheria, the treatment *par excellence* is the antitoxin, the efficacy of which has become so thoroughly established through the accumulation of experience, that the failure of use may justly be judged criminal.

As for the other pseudomembranous affections which sometimes complicate diphtheria, and sometimes alone involve the larynx and produce the condition known as "croup," the specific treatment cannot be said to have yet attained a very satisfactory position. For the streptococcic infection, an antistreptococcic serum is employed with doubtful success. If systematic bacteriological examinations were made in all these cases, with a view not merely of discovering whether the Klebs-Loeffler bacilli be present or not, but as to the presence of other pathogenic organisms, great benefit would no doubt accrue, and our therapeutical resources would thereby in time be materially enriched.

Dr. Chappell said that he would like to put on record in this connection a case of laryngeal stenosis requiring intubation from March 6 to March 30, during which time the tube was removed and reintroduced three times. The tube was introduced first on the 6th, removed and reintroduced on the 17th, 22d and 25th, and finally removed on the 30th. The intubations were done by Dr. Jno. R. Wellington, except the one on the 25th, which was done by Dr. Chas. W. Richardson. Dr. Richardson saw the child on the 18th also, and agreed that no more antitoxin need be given.

The case was mostly probably one of laryngitis hypoglottica acuta, as described in Dr. Richardson's article published in the WASHINGTON MEDICAL ANNALS, Vol. III, No. 1, 1904.

The case was at first supposed to be one of laryngeal diphtheria by the attending physician and the consultants, and three doses of antitoxin, of about 4,000 units each, were given, I think; the first dose the first day as soon as it could be secured after the child was first seen; the second dose on the second day, and the third dose either on the 10th or 11th of March—that is on the fifth or sixth day after the child was first seen. On the ninth day, I think it was, the child had a convulsion. No particular benefit seemed to be derived from the antitoxin, and as we thought that enough had been given to test its benefit and as the child was restless and nervous, we decided not to give any more.

When the tube was removed on the 22d, culture tubes were inoculated and sent to the Health Office. They proved negative for Klebs-Löffler bacillus, as did those sent on the 25th. The failure to find Klebs-Loeffler and the want of the usual effect of antitoxin as occurs in diphtheria are the reasons for rejecting diphtheria as the cause of the trouble. So far as the clinical aspects of the case are concerned, however, it resembled a case of laryngeal diphtheria so exactly that neither the attending physician nor the consultants doubted for awhile that it was a case of diphtheria. The case was reported to the Health Department as such from the very first, and the card put up.

The condition of the child was grave for a long time. It had a convulsion, as has been said, on or about the ninth day and continued restless and nervous for some days after, requiring the use of bromides and chloral and hot footbaths. The respirations at times were hurried and difficult; cough was very troublesome, requiring mustard plasters to the chest, etc. Later on in the disease strychnia was given, as the pulse was weak and the general condition bad. A trained nurse was with the child on and after the 12th of March. Nourishment consisted of albumen, broth, milk, whiskey, etc.

He thought the classification of laryngitis made by Dr. Wells was about correct—that is, as he understood it, and that it agreed very nearly with the classification in the American Text Book of Surgery, except that the Doctor had failed to mention laryngitis hypoglottica acuta, of which form of laryngitis the case reported by him (Dr. Chappell) was typical, he believed.

Dr. Shute said that while it is quite well recognized that diphtheria is a constitutional disease, with local manifestations usually to be found upon the tonsils, larynx and adjacent structures, he wished to direct attention to an unusual site of the local process, which may be of grave danger because of its rarity and liability to be overlooked, viz: diphtheritic conjunctivitis. He had seen two such cases. Croupous conjunctivitis is usually due to the

Klebs-Loeffler bacillus, but may exist without it. In true diphtheritic conjunctivitis, in addition to the membrane, there is to be found a deepseated, board-like induration which is quite characteristic.

One such case was seen with Dr. Butler; the Klebs-Loeffler bacillus was recovered by culture. Antitoxin did not seem to affect the membrane markedly, but certainly prevented extension of the process.

Sixteen years ago he saw Tweedy, of the Royal London Ophthalmological Hospital, treat diphtheria of the conjunctiva most successfully with instillations of solution of the muriate of quinin.

The disease may be associated with only slight deposits upon the lids but with the most severe constitutional symptoms.

Dr. Frank Leech said that the mortality of diphtheria can and should be further reduced by making systematic bacteriologic examinations of all children with obscure throat affections. Another way to reduce the mortality is to give antitoxin without waiting to learn the result of the culture. For the last ten years he has used antitoxin very freely, and has had no death from diphtheria where the remedy was properly administered.

About three years ago he saw a baby which presented a typical picture of follicular tonsilitis; he did not think it necessary to take a culture, and the tonsilitis subsided. The next day, however, he was called hurriedly and found the child suffering from acute laryngeal stenosis. Intubation was done, antitoxin was given, but the child died. It is particularly important to give antitoxin and to take cultures very early, even in slightly suspicious cases.

Dr. C. W. Richardson said that he had enjoyed Dr. Wells' very satisfactory paper. He had noticed with Dr. Chappell the omission of laryngitis hypoglottica acuta from the list given in the essay. This variety of laryngitis is a non-specific disease, producing very severe symptoms. He has seen a number of such cases; one characteristic is that the voice is not seriously impaired, never to the same degree as in diphtheria. In cases in which intubation was necessary, but in which the voice was retained he has almost invariably found the Klebs-Loeffler bacillus absent and this variety of subglottic swelling present.

Another and rare type of diphtheria of great interest is pulmonic diphtheria. Very many of these cases prove fatal, and are mistakenly diagnosed capillary bronchitis or catarrhal pneumonia. He had recently been called to intubate a patient for extreme dyspnoea; after the examination he could not convince himself that the disease present was either pneumonia or laryngeal diphtheria. After careful thought he decided that it must be pulmonic diphtheria and advised the use of antitoxin. The culture confirmed the diagnosis. Dr. Wellington also saw this patient and agreed with his opinion, but the intensity of the dyspnoea demanded some

relief, and intubation was done. The tube only increased the dyspnoea and was removed at once. The patient died.

He had recently been called to intubate a child at Providence Hospital, convalescent from an apparently frank lobar pneumonia. The disease went through the usual course, the temperature came to normal, and then suddenly symptoms of laryngeal stenosis appeared. No deposit could be seen in the larynx, but intubation was necessary, and the culture proved positive. Retrospective diagnosis would affirm that the case was one of pulmonic diphtheria.

The statement is so often heard that laryngeal diphtheria was not suspected because there had been no pharyngeal deposits. Primary laryngeal diphtheria is not rare; it has become usual. Most of the cases he has been called upon to intubate have been primarily laryngeal. In the ordinary pharyngeal type the profession has come to give antitoxin so early that the larynx is usually saved from invasion. Many of the cases of laryngeal involvement he has seen would fool any man; there are few warning symptoms, and perhaps no physician has been called at all until the stenosis has become alarming. He had very recently had a tragic case in which intubation was done. The tube became plugged within ten minutes after it had been introduced, with fatal termination. This was a physician's child, and the father had not entertained a suspicion that his child had diphtheria until a few hours before the operation was necessary.

He wished to speak upon one point as to the method of intubating. Why does Dr. Wells leave the string attached to the tube? There are no advantages in doing so, and the presence of the string adds the constant danger that the child will extubate itself. Dr. Richardson invariably removes the string as soon as he sees that the tube is safely in place.

Dr. Jas. Stuart said that the impression may be made by some of the statements in the essay and discussion that the cases of mixed infection with streptococcus are those that kill the children. They may appear to be very severe, but he has never seen such cases prove fatal. Pure, unmixed diphtheria is just as dangerous, and where any suspicion of its presence is entertained, antitoxin must be immediately given. To wait for the culture is dangerous. He recalled a case in which he intubated and during the operation actually pulled out a part of the membrane, and yet the first culture was negative, though afterward a positive one was obtained.

Dr. Wells said that he had seen no occasion for making a separate heading for laryngitis hypoglottica acuta; the affection seemed to him to be properly included among cases of laryngitis stridula; the pathology is probably the same; at least a distinction in practice is rarely possible.

As to cases of prolonged intubation, they would require separate consideration and are of great interest. About a year ago he had

met a physician from one of the southern States, who showed him a boy who had worn a tube for several months. There was no one else in his small town who could perform intubation, so that when the physician had occasion to go to New York he had to take the boy along.

Dr. Wells leaves the string attached to the tube for the very reason that produced fatal results in the tragic case mentioned by Dr. Richardson—the danger of sudden plugging of the tube. He had been in the habit of removing the string until he had the experience at Garfield Hospital of losing a patient, asphyxiated by a suddenly plugged tube. If the string had been left, the interne or nurse could have extracted the tube and saved the child's life; even with embarrassed respirations the child would probably have survived until the doctor could be summoned to replace the tube. Dr. Shirley, who has done as many intubations as any other man in this country, always leaves the string in place.

FRACTURES OF THE SHAFT OF THE FEMUR.*

By CHAS. S. WHITE, M. D.,

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The treatment of fracture of no other long bone of the body presents so many difficulties as of the femur, more particularly the shaft. The infrequence of its occurrence is the most gratifying phase of its surgery. Our eternal vigilance is sometimes rewarded with a sound limb and at other times a deformed member remains as a thorn in our side and makes us a target for captious criticisms. The accident occurs, unfortunately, in those whose occupations require activity, where the paramount issue is the usefulness of the limb.

Etiology.—Most frequently direct violence is responsible for the fracture, and rarely, muscular action. It is during male adult life that fracture of the femur is the rule, the occupation naturally supplying a predisposing cause. It is in young men following an active, hazardous occupation that we usually meet this fracture. Iron workers, bridge builders and stone setters are typical examples.

Pathology.—The upper, middle or lower third of the shaft may be involved. There is usually a single fracture, simple and

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uncomplicated. The solution of continuity is usually in an oblique direction antero-posteriorly, the upper fragment abducted and slightly flexed upon the trunk, the lower fragment adducted and overriding. This is particularly true of the subtrochanteric variety. In the lower third, just above the condyles, the inferior fragment is drawn backward by the tension exerted by the gastrocnemius muscle. The powerful external rotators and flexors of the thigh almost invariably displace the upper fragment to a marked degree, noticeable even upon casual inspection. Occasionally the direction of the violence which caused the fracture increases the amount of separation of the fragments. In transverse fractures of the shaft of the femur, little or no displacement may be present. The fracture is infrequently made compound by the sharp extremity of the upper fragment penetrating the skin. Injury to the femoral vessels is a grave complication, but is uncommon.

Symptoms.—The appearance of the limb is suggestive and usually sufficient for a correct diagnosis. The foot is in extreme eversion, there is bulging at the site of the injury and the patient is helpless. The lower end of the upper fragment is often prominent and may be covered only by the integument. The lower piece of the femur cannot be palpated with such ease. Crepitus may or may not be present. Mobility is exaggerated and loss of function is absolute. The pain is usually moderate, depending somewhat upon the shock present, but becomes excruciating upon manipulation. Swelling succeeds the injury very promptly and may be attended with discoloration. Edema about the knee-joint accompanies nearly every case, usually visible any time after the first day. It is hard to explain, but retardation of the venous circulation is usually accepted as the cause. Shortening from a half inch to two inches is generally present. The measurement is only approximate, as the normal limbs may differ from one-fourth to three-fourths of an inch. In securing a measurement certain precautions are necessary. The patient should lie on his back upon a hard mattress, the arms at the side and the lower limbs brought together. If it is impossible to adduct the broken extremity, let the two limbs occupy the same relative position to the body. Measurements are usually taken from the anterior superior spines of the ilei to the internal malleoli, all prominent bony landmarks. Should there have been a fracture of the tibia

or fibula of either leg previously, substitute the adductor tubercle for the malleoli in the measurements. While surgeons may vary in their technique of measuring, fairly accurate results are obtained. An x-ray examination should be made in all cases.

The prognosis is unreliable with the present methods of treatment. We cannot state with any degree of accuracy how many weeks' or months' treatment and rest will be required to secure a serviceable limb. With perfect apposition we should expect firm union in two months and functional use in four to six months. In the only book in which I have found a reference to the cases seen several years after the fracture, less than 33 per cent. had a perfect result in uncomplicated cases.

Treatment.—Buck's extension apparatus has been the sheet anchor in the treatment of fractures of the shaft of the femur, and it has done much for the advancement of the cure of these cases, but in my hands it has not retained the confidence I first placed in it. As we know, the principle is one of extension and counter extension to relax the muscles attached to the femur and so permit the adjustment of the broken bone, then maintaining reduction. Where little or no displacement is present, the treatment by this means is satisfactory and simple. The patient is anesthetized and placed upon a firm mattress with boards beneath the springs to augment the rigidity. A weight of fifteen or twenty pounds is hung by a rope over a pulley and to the other end of the rope a block is fastened, and this in turn is suspended by adhesive strips two inches wide, fastened upon the limb. The adhesive strips should extend as high as the point of fracture, reinforced by spiral turns of surgeons' plaster, and all covered by a muslin bandage. The foot of the bed should be elevated about six inches for counter-extension. From time to time additions have been made to Buck's method because it did not meet the requirements. Coaptation splints, extending from the pelvis to the knee are advocated by many to overcome the obstinate abduction of the upper fragment, but direct pressure sufficient to meet the aims of this splint is attended with some danger of injuring the soft parts over the end of the bone, more especially if the fracture be very oblique. The swelling necessitates the frequent adjustment of these splints during the first two weeks.

The long external splint from the axilla to the toes, with a T piece at the foot, together with the weight and pulley, is an im-

provement on Buck's extension alone, and is probably the best method of treating fractures of the shaft of the femur today, with the exception of the operative method. The splint steadies the entire limb and prevents eversion, something sandbags and coaptation splints cannot do. Massage should be practiced in two weeks, passive motion of kneejoint in four. We should expect strong fibrous union at the end of a month, when a plaster cast including the pelvis and extending down to the toes may be applied. At the end of eight weeks, all apparatus should be discarded and the patient allowed to go around on crutches. Two weeks later, he may bear weight upon the limb and gradually dispense with assistance. I see only a disadvantage in using a plaster dressing after removing the extension. The leg becomes inaccessible for massage and passive movements. At the end of four weeks I simply have weight enough to steady the leg and to prevent an accident, such as may occur during sleep. The passive movements of the knee are most important, and the neglect of this procedure may leave an undesirable legacy in the shape of a stiff joint. The weight may be removed in six weeks. Presuming the fracture is properly reduced, it is not improbable that it may become displaced. The patient may roll or jump in his sleep and upset an hour's work in a few seconds. The use of the bed pan jeopardizes it. A displacement may not be manifested by shortening, and we may be surprised to find non-union in four to six weeks. Unless every case is x-rayed, we must expect indifferent results. Even with zealous care and constant supervision of these cases, the extension does not completely fill the bill, and it often imbues us with a sense of security unwarranted by the subsequent condition. The patient is frequently pulled toward the foot of the bed until the block near the sole of the foot rests against the pulley support, or the weights touch the floor. In either case our extension no longer extends, and the shortening becomes as great as ever.

It is erroneous to imagine that if a simple extension apparatus is placed upon the injured member the fracture will unite in a good position. Rare judgment and attention to details is needed at all times. The results obtained by extension and splints have been studied by Scudder, and his findings are interesting. Of 16 cases treated in adults between the ages of 18 and 48, in only five were perfect results obtained, and in the remaining 11 cases

there were limited kneejoint movement, aching in the thigh, pain after excessive exercise, pain in wet weather, weakness in the whole limb and slight lameness in walking. In five cases occurring in old age (average, 58 years) none had functionally perfect results. One case had non-union with shortening and two cases use a cane in walking. Of fractures of the upper third of the shaft he says, "It will be found impossible to correct completely the ordinary deformity of abduction and flexion of the upper fragment, no matter in what position the lower fragment may be placed for traction. Rendering the closed fracture open by incision and suturing the bones in position is the only possible way of securing a perfect result, either anatomically or functionally." In about ten per cent. of the fractures of the shaft of the femur, the splint, weight and extension will fail, simply because they will not reduce and maintain reduction. Especially in fractures of the upper and lower thirds of the shaft is this prone to occur, chiefly because muscular action cannot be combated successfully in that way. We can determine this partly by mensuration and positively by the x-ray. It is hardly necessary to urge the use of the Roentgen ray in every suspected fracture of the femur. A picture is most desirable, as a fluoroscopic examination lacks the minutiae and lucidity of a plate. It is the extreme eversion and flexion of the upper fragment in fractures near the trochanters and the displacement backward of the lower fragment in fractures near the condyles that minimizes the usefulness of extension. It is because these cases are not recognized as being unfit for Buck's method that uniformly good results have not been obtained in fractures of the femur. We must learn to discriminate and use the open operation without hesitation where the indication is plain.

I have attempted to show by the accompanying skiagraph of two frogs the fallacy of the extension and counter extension as a routine practice. I do not mean to compare in every detail the leg of a frog to that of a man, but in many particulars the comparison is a fair one. The frog on the left has both femurs fractured about the center, showing marked overlapping and abduction of the upper fragments. The one on the right shows similar fractures with a twenty-gram weight on one leg, and ten-gram weight on the other. There is no shortening in either leg, but abduction is not corrected and the fragments are not in ap-

position. This is perhaps an exaggeration of the condition in the human subject. The same relative weight, figured on the body weight, would amount to about fifty pounds on a man. The rule is to apply fifteen to twenty pounds. Allowing the weight

taken up, the pulley, the weight of the limb below the fracture and the friction of the bed, a weight of twenty pounds by the Buck's extension is really exerting only about sixteen pounds pull. We are likely deceiving ourselves with the present method

of treatment. It is very clear that extension and counter extension will not get these bones together, even though shortening is not present. We are very likely to assume that absence of shortening is synonymous with reduction of the fracture. If after two or three days deformity or shortening exists, wiring is the treatment. The subsequent treatment of such a fracture is simplicity itself and requires much less attention than a simple one. The operation is not difficult and is not attended with the same danger of an interval operation for appendicitis, which, we are told, should have no mortality. Any operation, of course, may be contraindicated by such conditions as nephritis, senility, endocarditis and so on. I have never seen fat embolus follow the operation of wiring, and the only case in which I have ever seen it occurred after attempts to reduce a simple fracture of the femur. Death followed promptly. The operation of wiring requires no description, but once wired, there is no shortening or eversion, the bone does not slip, a cast can be applied at once, the patient made comfortable from the beginning and be assured of firm union. I would recommend wiring, especially in cases of fracture in the upper third of the shaft, and other fractures when perfect apposition is impossible and when union is delayed or vicious. My conclusions have not been reached hastily, and it is only after having seen 49 cases of fracture of the femur in the past three years that I offer this opinion. I am firmly convinced that the future treatment of this fracture will be largely operative.

Dr. Carr said that he had been much interested in the paper, and agreed that the conclusions reached were correct in most particulars. He was at a loss to understand, however, Dr. White's pessimism with regard to the weight and pulley. If the weight is put on early and is made heavy enough at the first, with careful supervision and attention during the first few days, there should be no shortening and the bones should unite in good alignment. The story is told in the first few days ; the weight will not keep the fragments in place unless properly used at the outset. It is only when the fracture is in the upper fourth or the lower fourth that the straight position of the limb is not admissible. In the first instance the leg must be elevated to meet the upper displacement of the upper fragment by the *psoas*, and in the second instance the leg must be bent to accommodate the downward displacement of the lower fragment from the upper fragment by the *popliteus*. If the action of these muscles is understood and proper adaptation to the principles involved is provided, the weight will maintain reduction.

Dr. Carr has always obtained perfect results from the weight and pulley and prefers that method of treatment of the fracture at the patient's home.

In cases where apposition cannot be maintained wiring is the proper procedure. A simple loop of wire or the steel drill as used by Shands is all that is necessary.

Dr. Shands said that the subject was of great interest to him. He believes that the prognosis under modern methods should be perfect. Von Bergmann makes the statement that in years gone by if shortening did not exceed ¾ inch to 1 inch the result was considered satisfactory; at present, out of 110 recent cases 87 show perfect results, and in 23 the shortening does not exceed ⅜ inch.

He believes that non-union is due to the intervention of soft tissues between the fragments; open operation is necessary to effect a cure in these cases. Where wiring is done, he treats young patients just as he does acute hip disease: by extension, fixation and protection by means of the plaster of paris spica. He lets these patients out of bed very early; recently he had permitted a young woman to get up in three days.

His criticism of the weight and pulley is that its effect is often deceptive. Extension is not always nor uniformly maintained: the patient works down toward the foot of the bed and the block may often be found resting against the pulley.

Dr. Carr's reference to Shands' method of using a drill for fixation gave him an opportunity to say that he had used it frequently and found it most convenient. He devised the technic about ten years ago: while operating to wire a fractured olecranon, he found that when the drill passed through the fragment and entered the shaft, fixation was very well accomplished by this simple peg; he therefore closed the wound, with the extremity of the drill protruding, and when union had taken place he had no difficulty in removing it. He has used the drill for securing fixation of long bones also, [and showed several skiagraphs to illustrate results obtained from its use.]

The qualification "if properly carried out" makes arguments for the weight and pulley lose force; we need methods with less chance of failure.

[He showed an ingenious appliance for keeping up constant extension in cases of hip disease and fracture while the plaster spica is being put on. He extends the cast in such cases from the nipple to the toes.]

Dr. Balloch said that the paper and discussion must be heard with pleasure by any surgeon. He finds that the use of Buck's extension is very much more desirable in the hospital than at home. In a private house, we have no x-rays, no competent nursing, no trained supervision. He was glad to hear a good word for the Liston splint; he has found it most serviceable for treating frac-

tures of the femur at home. When in place, it is possible to do almost anything with the patient without doing any injury.

The open operation in fracture of the femur is gaining advocates; the method affords great satisfaction to the surgeon, and allows almost a guaranty of a perfect result. It is especially desirable in fractures of the upper third.

The amount of weight to be used with Buck's extension should not depend upon rule; it should be adapted to the strength of the muscles. The situation is not comparable to cases of hip disease, with muscles wasted by disease.

He agreed with Dr. Carr that extension must be secured at the very first to obtain a cure without shortening.

The whole question is a most interesting one. It is the duty of the surgeon to lay the possibilities of the open operation before the patient.

Dr. Groover said that he was in accord with Dr. White in most of his conclusions. Dr. Groover's experience has been that a perfect result from the treatment of fracture of the femur by the ordinary methods is exceptional. Surgeons may differ in their definitions of a perfect result; he himself means by perfect, no shortening, no pain, to walk without a limp, and to be able to follow accustomed avocations with the same ease as prior to the injury. He has seen very few cases in which these requirements have been met. He believes that no practicable amount of weight, even as high as 50 pounds, will secure perfect extension and apposition when the primary shortening is as much as an inch or an inch and a half; especially is this true in fractures of the upper third. He believes that it will become a rule of surgery to wire fractures of the upper third, to use weight and pulley in fractures of the middle third, and to wire in fractures of the lower third.

The rule is to discharge these patients with some shortening and a limp, and he entirely agrees with Dr. White that the usual modes of treatment of fractures of the femur are unsatisfactory.

Dr. White, in closing the discussion, said that Dr. Carr probably meant by "perfect results" relatively good results. Dr. White had endeavored to communicate with a number of patients who had been treated at the Emergency Hospital for fractures of the thigh, and while only a minority replied they all preserve more or less evidence of the injury. If the after history of all of these patients were obtained, he believes that the usual modes of treatment will be more and more discredited.

CASE OF EXTENSIVE INJURY OF THE CORNEA.*

By R. S. LAMB, M. D.,

Washington, D. C.

J. B., male, white, Syrian, age 45, fruit dealer, was brought to my office at 1.30 P. M., June 28, 1906, with the following history : while opening a soda-pop bottle, it exploded, the glass flying in different directions, some of the fragments striking him over the left eye, cutting the brow and lid, and others striking the eyeball so that he could not see anything with that eye.

On examination I found a wound of the left eyebrow and upper lid, some clots and some active bleeding ; this was controlled and the lids separated. The condition presented indicated a probable enucleation. There was a gaping wound apparently extending from above the sclerocorneal margin, including the ciliary body, across the center of the cornea nearly to the opposite sclerocorneal margin, absence of any anterior chamber, and the iris filled the wound from end to end ; no vitreous humor had escaped.

Although not intending to do enucleation except as a last resort, I suggested that as the wound was large and the condition serious enucleation might ultimately be necessary, but that we would have to co-operate to get any results, and I advised that he go to the hospital, and gave a better prognosis with than without iridectomy. He refused both suggestions and asked me to treat him at his home. I agreed, if he would take the responsibity, as I do not approve of treating such wounds at home. He went home with instructions to get a hot bath, go to bed and await my coming. I saw him at 3.30 P. M., and advised his sister, who intended to nurse him, what vessels to use and how to prepare them and the normal salt solutions, and how to apply them. I believe that she followed instructions as well as we could expect.

The treatment was rest in bed, flat on his back ; solution of a half grain eserin sulphate in one ounce water, to drop one drop in the eye every hour (following a five-minutes' hot application of the salt solution,) and a pressure bandage. This was kept up for twenty-four hours, when, there being some sign of an anterior chamber, the intervals were increased to two hours, and the patient permitted to turn on his right side when he desired. After

*Reported and patient presented to the Society, January 16, 1907.

forty-eight hours of this treatment the eyeball was well formed and the cornea had closed, forming a shallow anterior chamber. A one per cent. solution of atropin was then substituted for the eserin solution, one drop every three hours, the hot applications every two hours; the pressure bandage was removed.

The intervals between the treatments were gradually lengthened and he was allowed to get out of bed on the fifth day. He began to come to my office July 5th for subconjunctival injections of normal salt solution, which I gave him at first every other day, the other treatment, except the hot applications, being discontinued; then every third day, then twice a week, once a week, until September 4, when his distant vision without glasses was 6–6 or 20–20 and near vision was J I at 13 inches.

You will observe that the corneal scar is crescentic and only slightly opaque, the hollow of the crescent holding the point of the cornea which lies on the visual axis or line of fixation; to the casual observer the scar is not visible.

Dr. Griffith said that Dr. Lamb was to be congratulated upon the results obtained from his treatment of this injury; such complete restoration of function could hardly be expected after a traumatism of such severity. Scarcely any impairment of the eye remains, while glaucoma or other still worse sequelae might well have been anticipated.

The Congress of American Physicians and Surgeons will meet in Washington May 7 to 9, inclusive. R. H. Fitz, of Boston, is President; N. M. Shaffer, of New York City, Treasurer; W. H. Carmalt, of New Haven, Conn., Secretary. The meetings will be held at the Arlington Hotel.

The Sixth International Dermatological Congress will be held in New York City Sept. 9 to 14, at the Academy of Medicine, 17 West 43d Street. The President is James C. White, of Boston; Secretary General, John A. Fordyce, 80 West 40th Street, New York City.

ON THE TREATMENT OF CHRONIC DISEASES OF THE HEART.*

By DR. THEODOR SCHOTT, of Nauheim, Germany.

In accordance with an invitation to lecture in the United States, Dr. Schott spoke on the treatment of chronic diseases of the heart. He stated that the former method of treatment by rest and digitalis had been inadequate. Even the many newer remedies, of which he described the principal ones, were either unsatisfactory or accompanied by unpleasant or even toxic effects. This compelled medical men to look for other means, and led to what are known today as the physical methods. These are principally the Swedish and Oertel's methods, as well as the balneological gymnastics treatment devised by the lecturer, conjointly with his late brother, August Schott.

Professor Schott spoke first of the Oertel-Cure, which has been a powerful incentive to renewed research. Still, in the main, Oertel's theory concerning the limitation of the supply of liquids proved to be erroneous. Mountain climbing is only notable in a limited number of cases of heart affections, and should really be resorted to towards the end and not at the beginning of the treatment.

The Swedish method is principally used in the form of Zander's mechanical contrivances. These do not, however, render the patient independent either of his momentary physical condition or of continued medical supervision. They are useful, nevertheless, wherever the cost of the apparatus and that of running them do not come into consideration. Of course, it should never be overlooked that with Zander's machinery the patient is dependent upon time and locality, and above all, that it is a very difficult matter to attain a precise degree of individualization in the measurement of the resistances.

The lecturer then described his balneological-gymnastic treatment. He began by depicting the physiological action of the baths, their influence upon the heart, the vascular system, blood-

*Synopsis of an address before the Medical Society, February 13, 1907.

pressure; the baths and gymnastics are tonics for the weakened heart. The baths work by means of the sensory, gymnastics by means of the motor nerve-treatments. He described the course of the bath-cure in heart diseases. The treatment begins with the use of the simple saline baths, especially in severe cases. The strength of the baths is then gradually and systematically increased until finally the strongest mineral water, with the highest percentage of natural carbon dioxide, is resorted to.

The lecturer then gave full details about the Nauheim baths, their solid and gaseous (CO_2) constituents, temperature, duration, etc. He then spoke of the mode of preparation of artificial Nauheim baths, as devised by his late brother and by himself; he also pointed out how their usefulness may be imperiled through not properly preparing them.

Gymnastics are used in two forms: Resistance gymnastics and exercises with self-resistance. In the first of these forms the resistance is offered by an assistant; in the second, by the tensifying (contraction) of antagonistic groups of muscles on the part of the patient himself. Professor Schott described the manner of performing these exercises and also the cautionary measures which they require. He further mentioned massage, the application of heat and cold, the use of electricity and the diet.

In conclusion he demonstrated a large number of drawings, showing heart limits, radiograms, pulse-tracings with relative blood-pressure; in this are illustrated the results which may be obtained in cases of heart disease by the balneological-gymnastic treatment.

Dr. Kober was unable to discuss Dr. Schott's paper from the standpoint of the specialist. He had, however, been interested in the Schott methods for the past twenty years, and felt sure that the physical therapies employed are responsible for the exceptionally good results obtained in the treatment of chronic heart diseases at Bad Nauheim.

Dr. Schott's exposition of his methods shows the necessity of a wider and more accurate familiarity on the part of the profession with the benefits to be derived from baths and gymnastics. We should also bear in mind the salutary effect these measures must have not only upon the skeletal muscles and tissues but also upon the heart muscle itself.

Dr. W. C. Rives had had the privilege of visiting Bad Nauheim and of observing the practical application of the Schott method; he had been deeply impressed by the wonderful results derived

from them. He remembered very well one case—that of a medical man from England—who came to Nauheim entirely incapacitated, with dropsy, orthopnoea, and other evidences of a grave cardiac lesion. He was given the baths, and while in the third bath said that he was sensible of a most remarkable feeling of relief. Later he was given gymnastics, and in one month was so improved that he was able to walk about in comfort.

Even in that grave lesion, aortic insufficiency, the baths brought great relief and often restored perfect compensation. Some of the most remarkable cases were those of supposed angina pectoris, in which complete relief was obtained from the baths, relief which continued in some cases over a period of ten years.

Dr. Rives had gone to Bad Nauheim somewhat skeptical but came away convinced. The practical value of the cures at Nauheim is evidenced by the wide public appreciation that prevails at this time.

Dr. A. F. A. King said he was sure all had been delighted and refreshed to know that still something more can be done for these distressing cardiac diseases than the usual round of strychnia, digitalis, strophanthus, etc. Dr. Schott had spoken of the possibility of imitating the baths; what was the most important ingredient? He mentioned some interesting experiments to determine the effect of calcium salts upon muscle, and instanced the power of calcium salts to produce contractions of the heart muscle after sodium salts no longer produced response. Does Dr. Schott think that the calcium chloride contained in the baths is the beneficial ingredient? The query was prompted by an odd experience Dr. King had had some years ago. An old gentleman with chronic heart disease was under treatment at one of the hospitals and his pulse had been extremely irregular and variable; for several weeks an obstinate diarrhoea developed and for this he was given a mixture containing precipitated chalk. To Dr. King's surprise, after the chalk had been taken for one day, the pulse assumed a perfectly regular character. Now, did the calcium so administered produce this effect?

Dr. Schott said that all the ingredients intelligently used in proper proportions are necessary in the treatment. No single ingredient can be used alone; all must be used together. The bath containing equal proportions of sodium and calcium is best to begin with; a cautious increase of the calcium salt may be permissible.

The tonic effect of the brine bath is not so striking, but is lasting; the tonic effect of the carbon dioxide bath is rapid but fleeting. The brine and carbon dioxide used coincidently produce the best results—on the one hand, slow tonification by the fixed salts, on the other, rapid tonification by the carbonic acid gas. The use of arbitrary, fixed doses for the artificial Nauheim baths, as manufactured and recommended by American pharmaceutical

houses, does harm, and he had come over to America to protest against this practice. It is very easy to use the crude chemicals, and regulate the production of carbon dioxide as conditions require.

PHENOL IN ERYSIPELAS. TWO CASES*

By B. M. RANDOLPH, M. D.,

Washington, D. C.

The following cases are reported in order to draw attention to a method of treating erysipelas, which I believe has never received the consideration it deserves ; a method which, when properly applied gives such brilliant results, in comparison with those generally in vogue, that it amazes me that it has not supplanted them. In the application of pure carbolic acid controlled by alcohol, used before secondary infection of deeper tissues has occurred, I am convinced that we have as near a specific remedy for erysipelas as exists in the practice of medicine or surgery.

In 1894, Dr. Seneca D. Powell demonstrated that ethyl alcohol was a prompt chemical antidote to carbolic acid, instantly inhibiting both its caustic and toxic effects. From that time till his death, a few years ago, Dr. Powell developed the use of this agent thus controlled, using it extensively in his surgical practice and clinics, dealing with a great variety of surgical infections, and demonstrating its use before the students at the New York Postgraduate. At a meeting of the Southern Surgical and Gynecological Society, held in Atlanta in Nov. 1900, Dr. Powell presented a paper giving a history of the use of carbolic acid in surgery, with special reference to the application of his discovery of the property of alcohol in limiting its action. In that paper he described the treatment of erysipelas with pure carbolic acid, followed by alcohol. His results may be found in the records of the erysipelas pavilion of Bellevue Hospital during his service there. Dr. Powell has been opposed, discredited and ridiculed by his professional brethren, especially by those of New York. Of *all* the claims advanced by him as to the advantages of phenol and alcohol, I am not qualified to speak ; but of the claim that

*Read before the Medical Society, Feb. 6, 1907.

this treatment has the power of aborting erysipelas, I am thoroughly convinced.

Case I.—In the autumn of 1900, while practicing in Richmond, Va., I was called to see a child of 4 years. She had always been healthy and vigorous. Her surroundings were unclean and she was running barefoot. The mother told me that the child was taken suddenly sick with chill, loss of appetite, listlessness and high fever; she had no idea of what was the trouble. The child had several sores on her feet and legs, and in one of these sores erysipelas had developed. The temperature was about 104, and the child felt very sick, and was much prostrated. I will not attempt to relate all that I did for that child. I first tried the list of remedies recommended by the various works on surgery to which I had access. Next I asked the advice of various prominent surgeons, and did everything they suggested, which was but a modification of what I had already done.

You will pardon the digression, if I stop here to say that erysipelas is not a surgical disease in the accepted sense of that term. I could not get one of my surgical friends to go near this case. The surgeon specialist of today has ceased to be a factor in the treatment of this malady, and, to his credit be it said, in its causation as well. All my remedies were futile. The child continued very ill, the temperature high, and the eruption spread rapidly up the leg and thigh. It progressed at the rate of about 6 inches a day.

I had recently seen in an article by Dr. A. M. Phelps a reference to brilliant results obtained in erysipelas by the combined action of carbolic acid and alcohol. I spoke of it to one of my surgical friends, and he was very conservative. Finally, when the disease had spread to the inguinal region in front and to the lumbar region behind, and it appeared that it would soon involve the vulva and vagina, I tried the new treatment. I did not attempt to treat the whole area involved, but simply went around the border of the eruption, painting a zone of about one inch of diseased and one-half inch of healthy tissue with pure carbolic acid on a cotton swab. This was allowed to remain until the skin began to whiten, and was then sponged off with a cotton sponge soaked with 95 per cent. alcohol. When I returned in six or eight hours the child's temperature was normal, the eruption was checked, and she made an immediate recovery.

Case II.—The evening of April 24, 1906, I was called to see a gentleman 70 years of age, who gave the following history: Perfectly well up to two days previously. Three days before had his scalp massaged by a barber. The next afternoon had malaise and loss of appetite, and that night had a chill followed by fever, and profound depression. The day before I saw him he began to have itching and burning of skin of upper frontal region. Took calomel and quinine, and the bowels were freely moved. The morning of my first visit he noticed redness and swelling of forehead. The urine was diminished in quantity and dark in color. When I first saw him there were two areas of typical erysipelas, one on each frontal prominence, and each about the size of a silver dollar. The skin was greatly swollen, deep purplish red, and the eruption clearly outlined. The temperature was 102.6. The above described treatment was immediately resorted to, and the involved portion of the scalp was then dressed with an ointment consisting of carbolic acid, 2 parts; unguentum ichthyol, 20 parts; petrolatum, 100 parts. Potassium citrate, half a drachm every four hours, was ordered and a semi-liquid diet was prescribed. The next morning the patient's temperature was normal, and he was feeling much better. The urine was passed freely and was of normal color. The potassium citrate was now given three times daily, and one ounce of whiskey twice daily was ordered. In the afternoon his general condition was improved, but two small spots of infection were found, one two inches above the right mastoid, and one immediately behind the same ear. These were treated as before, and immediately controlled. Next morning the improvement continued, but that afternoon he had a chill and return of fever. When I saw him in the evening, another focus had developed just above the left ear, and had spread rapidly downward, involving the entire ear inside and out, and the skin immediately in front and behind it. Carbolic acid and alcohol were used, and the focus dressed as before.

Such an extensive application of the phenol had to be made in this instance that I felt a little timid about poisoning, and think I was lacking in thoroughness along the anterior margin of the involved area; or perhaps, as the face was naturally vascular and ruddy at this point, I erred in the artificial light in determining where that margin was. At all events, within the next twelve

hours the eruption spread like a prairie fire, and when I saw him the next morning, the involved area was bounded by a line which ran from one inch above the ear forward and downward to the malar prominence, thence parallel to the lower lid, and approaching to one-fourth inch of its margin, as far as the nose; then downward, taking in about one-eighth inch of the ala of the nose, backward to the angle of the jaw, whence it passed upward along the hair line behind the ear. The included area, especially the ear, was greatly swollen and very painful. This time there was no mistake in the thoroughness of the treatment. Great care was taken to apply it to every particle of involved surface and well beyond its margins.

By evening the temperature, which had risen to 103, had fallen to normal, and the spread of the eruption was checked. The patient made an uninterrupted recovery. I saw him for three or four days afterward, watching for further developments. No further outbreak occurred, though I should mention two or three small foci that appeared on the scalp during the aforesaid treatment, which were immediately aborted.

It was astonishing to see how this treatment not only checked the spread of the disease, but caused prompt healing of the skin already invaded. Within twenty-four hours all evidences of inflammation had entirely disappeared, leaving the skin drier and darker than normal, but otherwise unaffected. There was no desquamation except where there had been blebs.

There was absolutely no evidence of phenol poisoning, though the urine was carefully watched throughout. The subsequent history of this patient was uneventful. For a day or two he complained of a confused and stupid feeling about his head, but this disappeared after a drive in the open air. Later the conjunctiva of the left eye was injected, and a pustule, the size of a pin head, appeared on the bulbar conjunctiva midway between the margin of the iris and the outer corner of the eye. This was opened, the cavity wiped out and touched with nitrate of silver. Solution of zinc sulphate, one grain to the ounce, was dropped in twice daily, and the conjunctivitis got well in two days.

This case has an additional interest because of its etiology. There can be no doubt that the erysipelas was communicated by the barber, and emphasizes the wisdom of laws enforcing cleanliness in barber shops.

Dr. Hooe said the paper had interested him deeply. Dr. Randolph had mentioned the treatment to him last summer. Shortly afterward a young man came under his care with erysipelas of the foot and leg; he had a very high fever, rapid pulse, and seemed very sick. Carbolic acid, followed by alcohol, was used as described, and on the following morning the patient was apparently well. Contrary to Dr. Randolph's experience, there was decided desquamation in this case, due no doubt to delay in applying the alcohol, in his zeal to give the phenol a fair chance. Dr. Hooe had no doubt as to the efficacy of the treatment.

Dr. A. F. A. King said that the majority of the cases of erysipelas will get well with almost any treatment. Twenty years ago the method of treatment was by the hypodermatic use of carbolic solution, or by painting a ring around the erysipelatous patch with silver nitrate. He remembered well an epidemic of erysipelas while he was an attending physician at Providence Hospital; the patients were treated with tincture of the muriate of iron, cranberry poultices, etc., and they all got well in about seven days.

Dr. Reyburn congratulated Dr. Randolph upon the results in his two cases. As to the principles involved in the use of the remedy—to cauterize first with phenol, and then neutralize with alcohol—the safety of the method lies in the strength of the phenol used. It is when dilute carbolic solutions are used that poisoning occurs. He remembered having cured cases by drawing a ring around the erysipelatous patch with the caustic stick. The method cures by destroying the skin at the margins, thus limiting the spread of the disease.

The instantaneous results obtained by Dr. Randolph discredited Dr. King's objection that cases get well without treatment in seven days. They do not all get well in seven days, many go on to phlegmonous inflammation and other destructive lesions. Dr. Reyburn believed the paper contained a very valuable hint.

Dr. J. D. Thomas said that the suggestion offered was a valuable one if the results claimed could be shown to be due to the treatment. But how does the depth of the streptococcic invasion of the skin compare with the depth of the penetration of the phenol? Have any histologic examinations been made to show this? Ordinarily phenol merely coagulates the upper layers of the epiderm; if its action should penetrate deeper, ulceration and a scar would result.

Dr. S. S. Adams said that, as Dr. King had remarked, hypodermatic injections of solution of carbolic acid had long ago been used for the treatment of erysipelas. He remembered when Dr. Ashford used it in this way at Children's Hospital in 1878, but without effect. We know that erysipelas is a constitutional disease with local manifestations; if the phenol, by the method advocated by Dr. Randolph, does not reach below the surface of the skin, how does it accomplish any good?

In both cases reported other treatment had been tried before the phenol was used, and as erysipelas terminates by crisis, how can Dr. Randolph be certain that the phenol caused the subsidence of the symptoms? Also, carbolic acid when applied to the skin produces desquamation, and erysipelas is followed by desquamation ; why does this not occur after the phenol treatment?

Dr. Adams was pleased to hear of the method advocated by Dr. Randolph, but thought it needed further investigation.

Dr. Chappell said that the phenol is followed by the application of alcohol ; 95 per cent. alcohol when used alone has a good effect in erysipelas ; perhaps the alcohol was the beneficial agent in these cases. He agreed with the other speakers that most cases of erysipelas are self-limited.

Dr. Macatee said that erysipelas had been defined as a constitutional disease with local manifestations. It is rather in the same category with diphtheria ; a local infection with constitutional toxic manifestations.

If some effective antiseptic agent could be used upon the diphtheritic foci in the throat, without doing damage to the patient, the disease would be arrested. Dr. Randolph seemed to have proven that an agent could be thus used in erysipelas, viz : phenol, and as a natural consequence the constitutional manifestations disappear.

Dr. Mackall said he did not believe that the phenol killed the streptococci. His idea was that a local congestion was produced with increased local leucocytosis and phagocytosis.

Dr. Phillips said that carbolic acid when applied to the skin and followed by alcohol loses its escharotic effect but may leave sufficient residue to have some toxic constitutional effect. He had accidentally spilt some carbolic acid upon a considerable area of his own skin ; he had no pure alcohol at hand, but promptly washed off with whiskey ; the local effect of the acid was completely neutralized, but he later had marked symptoms of phenol intoxication. Perhaps the residue in the skin is sufficient to produce the beneficial effect reported in erysipelas.

Dr. Randolph had expected to meet with just such objections to the phenol method as had been urged in the discussion. But anyone reading Powell's original article will find that all the objections have been anticipated and well answered in that thorough argument for the method.

His idea of the pathology of erysipelas is that it is an acute streptococcic invasion of the subepithelial lymphatic system of the skin ; the infection spreads along this level, and will remain superficial until time allows systemic invasion.

Dr. King's objection that these cases will get well with no treatment does not take into account such accidents as systemic invasion, in which not even the phenol treatment can be effective ; but even in the seven-day variety, the patient will be very glad

to get well in from 12 to 24 hours, which is possible with the use of phenol.

As to whether the good effect is from the alcohol or from the carbolic acid, he believes that the only effect of the alcohol is to check the action of the phenol, and as far as is yet known the use of the phenol is empirical. As to following desquamation, he did not intend to convey the impression that none at all occurs, but that there is none of the immediate flaky desquamation, such as we see after the application of iodine, etc.

As to poisoning, of course it can be produced by absorption through the skin, and it was often so produced by the carbolic vapor in the days of Listerism. Powell says he has never seen any poisoning when the phenol was properly used after his method.

Dr. Randolph favored Dr. Mackall's suggestion as to the action of the phenol: a derivative effect with consequent local leucocytosis.

MEDICAL INSPECTION OF SCHOOLS.*

By G. H. HEITMULLER, A. B., M. D.,

Washington, D. C.

France was the first country to have medical inspection of schools. It was established by law in Paris as early as 1843, but it has not developed to any great extent. The inspectors, receiving 800 francs yearly, having under their care from 15 to 20 school rooms, are required to make but two visits a month to each school, and special visits when so ordered by the mayor or prefect of the district. Some of the larger cities of England, Germany and Canada also have medical inspection of schools.

Although Boston has the honor of being the first city to adopt it (1894) in this country, she has failed to develop and improve her system of inspection.

At the present time New York and Philadelphia have the highest developed and best system of any city in this country and, so far as I know, in the world. The following is a résumé of the system in Philadelphia. It is divided into—

1. Sanitary inspection of buildings.
2. Systematic examination of pupils.

In sanitary inspection of buildings the following points are

*Read before the Medical Society, February 6, 1907.

noted: (a) Overcrowding, the cubic capacity of each room, number of occupants. (b) Heating and ventilation: If steam or hot water, is there provision for ventilation by direct or indirect method? Give temperature of air in rooms at time of visit, also maximum and minimum temperature. (c) Illumination: Are rooms well lighted? If from above, behind, etc. Number of windows, size, relation to pupils and to floor space. (d) Are buildings ordinarily clean? Are there accumulations of sweepings on grounds, in cellars, etc.? Is ice and snow promptly removed? (e) Drinking water: If raw, filtered or sterilized. What provision for drinking vessels? Note condition of all sinks, plumbing, etc. (f) Toilets: Note condition of water closets and urinals, especially with regard to cleanliness, odors, etc. Give number and location of closets and urinals and state if sufficient for pupils using same. (g) Coat rooms: Note facilities for storing, whether lockers, whether one or more coats, hats, etc., hang on single hook; also ventilation. (The cloak rooms in the vast majority of Washington schools have no lockers or special means of ventilation, and consequently the odor is often very offensive.) (h) Cellars: How lighted, ventilated? Are they clean, whitewashed, dry? (i) Playgrounds: Give size and condition, also condition of sand pile. Are they adapted to needs of pupils? (j) Note character, quantity and quality of cakes, candies, fruits, etc., sold about school to pupils.

INSPECTION OF SCHOOL CHILDREN.

Exclude every child suffering from (a) Acute disease, be it contagious or not. (b) Any form of disease that may be a menace to other children with whom it comes in contact. (c) Any disease of sufficient gravity to seriously impede work of the pupil at school. (d) Exclude every child who does not show evidence of successful vaccination.

Systematic examination of all pupils for defects of vision—Myopia, hyperopia, strabismus and astigmatism.

Defects of hearing—Test with watch and rule, inspect auditory canal.

Deformities—Spinal curvature, flat foot, etc.

Ophthalmic diseases—Acute and epidemic conjunctivitis and trachoma.

Throat and nose diseases—Mouth breathing, nasal discharge, adenoids, hypertrophied tonsils.

Cutaneous diseases—Impetigo, itch, etc.

Chest diseases—Phthisis, bronchitis, asthma.

Diseases of malnutrition—Rickets, scurvy, tabes.

Parasitic diseases of scalp and elsewhere.

A routine culture is made in all cases of sore throat.

In New York, on Jan. 10th, 1903, trial cultures were made from all children showing the slightest redness and a hypertrophied condition of the tonsils. 11,451 cultures were made, 757, or nearly 7 per cent., were positive, 318 suspicious, 10,376 negative.

The system in New York is even more perfect in that a special corps of trained nurses is employed (each nurse receives $75.00 per month) to give treatment for parasitic and contagious skin diseases, and, further, special hospitals have been established for the treatment of eye diseases, especially trachoma, which is frightfully prevalent. Adenoids and hypertrophied tonsils are removed at the schools. Dr. Cronin, the assistant chief medical inspector, writes me that he hopes soon to see a law enacted so that parents can be compelled to do as advised by the inspectors. This will be a great step in advance, for the apathy, indifference and neglect of some parents is beyond belief. In very many cases parents pay no attention whatever to recommendations for treatment for such conditions as adenoids, hypertrophied tonsils, errors of refraction etc.

City.	Year Established.	Salary per annum.	Frequency of visits to each school.	Average time daily.
New York...	1897 1902	$300 1,200	daily	3 hours.
Philadelphia	1898 1904	Vols.* 1,200	daily	6 hours.
Boston.....	1894	200	daily	2 hours.
Washington.	1903	500	bi- and tri-weekly	3 hours.
Newark.....	1901	400	daily	according to cases.
Providence..	1904	500	"once in 5 weeks"	"(?)"
New Haven..	1901	240	"twice a month"	impossible to estimate.
Cambridge..	1896	200† 100‡	daily	on call until 10 A. M., daily.
Plainfield....	1898	200	No stated time	can not estimate.
Montclair....	1905	350	bi-weekly	1½ to 2½ hours.

*Volunteer inspectors gradually lost interest, and abandoned, 1902
†Public schools. ‡Parochial; can't say.

The preceding table, compiled from answers received to a circular letter sent to all cities supposed to have paid medical inspection of schools in November, 1905, gives the names of the cities having such service, date when established, salary, frequency of visits to each school and average time spent daily.

The following cities are said to have a paid system : Jersey City, Paterson, Camden, Asbury Park, Mt. Holly, Malden, Arlington, Springfield, Hartford, Marlborough, Ann Arbor, Salt Lake City, Atlantic City, Baltimore, Brookline, Mass., Detroit and Cincinnati.

The following have a volunteer system : Kansas City and San Francisco.

Eleven other cities have a system of eye examination by the teachers, some under direction of oculists, others without supervision.

Chicago began medical inspection of schools with a few inspectors of the Health Department in a small way in 1896. In 1900 an inspection service, with 50 inspectors at $50 per month, was established by the School Board, but it only lasted a few months, owing to a shortage of money. Dr. Spalding, the Chief Medical Inspector, states that "while it lasted it was of much value in keeping infectious diseases out of the schools." Since that time the same board has kept 10 emergency inspectors at work until this year, when the School Board abandoned all attempts at school inspection (Sept., 1906) and called upon the Health Department to do this work. The Health Department has asked the city council for 100 inspectors.

It is reported in the November 17, 1906, issue of the *Journal of the A. M. A.* that "Diphtheria continues to spread in Chicago, and the mortality is higher than any October or November for four years. The Chief Inspector attributes this increase to the absence of school inspection, and is making every effort to have this service resumed." Whether or not this opinion is held by the Health Departments of other cities that have medical inspection of schools can be seen from the answers received to the question : Do you think that medical inspection has decreased the per cent. of deaths to cases of contagious diseases, especially diphtheria ?

New York answers "No," but recognizing the decrease explains by saying "antitoxine is chief factor."

Chicago gives an unqualified "Yes," as does Philadelphia. Boston says "Probably not." We find a reversal of opinion, however, when we compare this reply with an extract taken from the Massachusetts State Board of Health report for the year 1894 (the year medical inspection was adopted), which says: "The prevalence of the disease (diphtheria) in epidemic form made it possible for the Board of Health to introduce three new factors for the suppression of the disease: one is the new remedy antitoxin; another agent has been found in the Bacteriological Laboratory; the third, and probably most potent agency in controlling the spread of this disease and that of scarlet fever, is the new force of fifty physicians for the daily inspection of the schools, in which there are more than 70,000 of the most susceptible subjects to these two diseases. This has set in practice the most active, constant and skillful watchfulness for the earliest symptoms of these and other diseases among school children.

The Health Department of Washington gives unqualified assent.

Newark says "Yes, but free use of antitoxin is the real cause of decreased per cent."

Providence, "Not appreciably."

New Haven gives unqualified "No."

Cambridge thinks it "Probably has."

Plainfield says "Yes."

Montclair does not reply, as her system has been in operation only one year, but has had a decrease of 1.9 per cent. for the first year.

The following table gives the percentages of deaths to cases of diphtheria for the eleven cities that have replied:

City.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
New York...	...	...	19.1	15.4	14.6*	12.2	13.1	13.4	15.9	10.9†	11.2	10.4	10.3
Chicago	...	...	16.09	10.9*	7.73	Statis	tics n	ot obt	ainabl	e after	1897.	...	...
Philad'a.....	...	...	30.40	24.0	22.7	22.0‡	19.3	17.6	15.23	17.79‡	17.08	15.26‡	13 98
Boston.....	37.2	29.0*	16.11	12.74	13.42	11.14	10.72	10.79	10 63	11.33	10.32	8.12	8.52
Washington	...	...	23 9	17.48	18.47	17.5	17 5	13.9	12.9	12.7	10.4*	9.81	9.0
Newark	...	...	20.6	17.2	14.1	13.0	10.6	10.0	8.9*	10.6	10 4	9.0	6.8
Providence..	...	...	20.4	14.0	12.3	9.61	16.6	11.65	11.1	11.7	10,48	10.25*	10 85
New Haven	...	...	25.0	23.8	22.2	20.0	13.7	15 0	13.1*	8.1	13.8	10.9	16.0
Cambridge...	...	...	17.8	13.6*	15.8	19.0	10.9	7.78	9.59	7.6	8.6	7.57	7.71
Plainfield....	...	...	...	25 0	5.5	10.0*	7.0	...	13 8	10.9	3.3	7.6	4.3
Montclair ...	...	...	53 0	33.0	17.0	21.0	10.5	17.0	3.5	3.6	11.0	6.9	5.0*

*Year of establishment of medical inspection.

†Salaries increased to $1,200 per annum.

‡1898, volunteer system established, abandoned in 1902; paid system established in 1904.

When we compare the per cent. of deaths to cases the year before medical inspection was established with the year of its establishment we find a decrease in the percentage in every case excepting the small city of Plainfield. The percentages of New York and Philadelphia show curious changes.

In New York, in 1896, the year before the inauguration of medical inspection at $360 per annum, the percentage was 15.4; for 1897, the first year of inspection, it was 14.6; the next year 12.2, the lowest point reached; this is followed by a gradual rise from year to year until 1901, when it was 15.9; the following year, when salaries were increased to $1,200 per annum, it dropped to 10.9; the following year 1903, it was 11.2; 1904, 10.4; 1905, 10.3.

In Philadelphia, in 1897, the percentage was 22.7. In 1898 the volunteer system was established, and the percentage was 22. In 1899 it was 19.3; 1900, 17.6; 1901, 15.23. In 1902, when the volunteer system was abolished, it rose to 17.79; in 1903 it was 17.08; in 1904, when the paid system was adopted, it dropped to 15.26; in 1905 it was 13.98. These decreasing and increasing and again decreasing percentages synchronous with the establishment of medical inspection and increase of salaries are at least suggestive if not conclusive.

Washington offers a brilliant example of the value of medical inspection. In 1901 the percentage was 12.9; in 1902, 12.7; in 1903, when inspection was adopted, it fell to 10.49; 1904 to 9.8; 1905 to 9.

Smallpox, the one disease that should not occur at all in the public schools, not only does occur but also is disseminated by them. Dr. Eliot, the physician in charge of the Smallpox Hospital, in his report to the Health Officer for 1903 says: "The past year, as have former years, has proven beyond a doubt the necessity for more stringent regulations governing vaccination in the public schools of the District of Columbia.

"Among the first admissions to the hospital during last July was a man who had been unsuccessfully vaccinated four times previous to his attack of smallpox. His disease was contracted from his child, a pupil of one of the public schools, who, being unsuccessfully vaccinated, had contracted the disease from an unknown source while still attending school. Members of another family intimately associated with his, but living several blocks

away, were also infected by this child, the children attending the same school. Later in the year, a man who had come from Philadelphia in a few days developed smallpox, inoculated his unsuccessfully vaccinated children, and they in turn infected others of the same school. In another section of the city cases appeared among the unsuccessfully vaccinated pupils." This happens year after year. Medical inspection can absolutely prevent such occurrences, but the local service cannot be criticised for not accomplishing such results.

An inspection of the pupils of the Van Buren and Edwin L. Stanton schools last June during an outbreak of smallpox revealed the fact that of 507 pupils 324, or over 63 per cent., had never been successfully vaccinated.

Leaving contagious diseases, I will finish my paper with a brief consideration of physical defects in backward children.

This Spring I inspected 146 pupils, who were two or more years older than the average age of their grade, in the 3d and 4th grades of five schools, and 2d grade of two schools, in order to determine if there were any physical defects that might explain the backwardness of these pupils.

Of the 146 pupils examined, 37 had defective sight, 18 had defective hearing, 17 had defective hearing and sight, 9 had adenoids, 3 had adenoids and defective sight, 2 had adenoids and defective hearing, 1 had defective sight and stammering speech, 1 had defective hearing, cleft hard and soft palate, hare lip and impediment in speech, 1 had defective sight and hearing, perforated soft palate and nebulae of cornea and impediment in speech. Total, 90 or 61.6 per cent.

Excluding those pupils who have attended the public schools for only one year and those of whom no record has been made, there are only three who have spent only one year in each grade. All others have spent two years in at least one grade and the vast majority two years, and some three years in two or all grades. These facts certainly justify the consideration of the advisability of establishing special classes for defective and backward children. The only objections that present themselves are, first, that of a stigma attaching itself to pupils attending such classes, and second, that of expense. The objection of a stigma being placed on a pupil attending special classes will have no weight when it is clearly understood that the great majority of defectives are such

by reason of physical and not mental defects. Teachers and principals state as a matter of fact that special classes would tend to remove such stigmata, as in ordinary classes the backward pupils are singled out and catalogued by the normal pupils without mercy.

It will require very little reflection to show that the present plan is at least as expensive if not more expensive. The expense for teaching in special classes will be three times as large, as the class should be only one-third the size of the ordinary class. However, the money is not spent for going over the same subject two or three years in succession, and thus the cost of teaching is reduced to nearly normal. There will, however, be great saving in cost of books and supplies. In ordinary classes two and sometimes three sets of supplies are required for each grade, while in special classes only one set will be needed. In addition we have the saving of time to the normal pupils which now must be given to defectives.

Special classes for defective and backward children were established in 1894 in Providence, in 1898 in Springfield, and also in New York. Dr. Cronin states, "One class, 150 children, showed about 99 per cent. physical defects—adenoids, tonsils and refraction. Adenoid cases and tonsils were operated on at school June 21, 1906. The result in improved scholarship up to date—simply marvelous."

(Those cases where some defect was found are appended. Hearing was tested by a watch that could be heard by a normal ear at 14 inches; 12 inches was adopted as normal.)

"Philadelphia's School Board contemplates starting them (special classes) in near future."

"In Newark this subject is now under discussion."

R. G. Loring, *Boston Medical and Surgical Journal*, December 13, 1906, found a majority of normal eyes among the good pupils and a majority of defective eyes among the poor pupils in 420 examined.

School.	Pupil.	Age	R.V.	L.V.	R.E.	L.E.	Gr.	Number of years in each grade, and remarks.
Amidon.								
R. 1.*	S. J.	9	20/20	20/20	12	12	2	3 in 1. Adenoids.
R. 4.	C. F.	9	20/30	20/20	12	12	2	2 in 2.

*R, room; R.V., L.V., visual acuity in right or left eye; R.E., L.E., right and left ear; Gr., grade in school.

School.	Pupil.	Age.	R.V.	L.V.	R.E.	L.E.	Gr.	Number of years in each grade, and remarks.
Amidon.								
R. 5.	E. W.	12	20/20	20/20	12	12	3	No record. Adenoids.
	W. L.	11	20/70	20/20	12	12	3	2 in 2.
	L. N.	11	20/20	20/20	12	12	3	2 in 3.
R. 7.	J. H.	12	20/20	20/20	12	12	4	2 in 3, 3 in 2. Adenoids.
R. 4.	A. C.	12	20/40	20/30	12	12	4	No record.
	M. W.	10	20/20	20/20	12	12	2	3 in 1. Feeble minded.
R. 8.	N. S.	11	20/70	20/70	9	6	3	Three years in school. Nebulae of cornea, perforation of soft palate, impediment in speech. With all of these defects the pupil has kept up with her classes.
R. 7.	H. H.	13	20/20	20/20	10	12	4	No record.
	E. M.	14	20/20	20/20	1	1	4	2 in 4, 4 in 3, 2 in 2.
S. J. Bowen.								
R. 7.	W. T.	11	20/30	20/30	9	5	3	2 in 2, 2 in 1.
	J. S.	11	20/20	20/20	10	9	3	2 in 3, 2 in 2. Adenoids.
	C. B.	12	20/20	20/20	9	5	3	2 in 3, 3 in 2.
	C. R.	11	20/20	20/20	4	11	3	No record.
	K. N.	11	20/30	20/20	12	10	3	2 in 3, 2 in 2, 2 in 1.
Bowen.								
R. 5.	W. S.	11	20/20	20/70	7	8	3	2 in 3.
R. 2.	M. W.	11	20/20	20/20	11	7	3	2 in 3.
R. 3.	E. E.	14	20/20	20/20	2	7	4	3 in 2.
R. 4.	W. M.	12	20/20	20/20	1	2	4	2 in 3, 2 in 2, 2 in 1.
R. 5.	T. F.	13	20/20	20/20	9	12	4	2 in 3, 2 in 2.
R. 6.	W. S.	12	20/20	20/20	6	12	4	2 in 3.

School.	Pupil.	Age.	R.V.	L.V.	R.E.	L.E.	Gr.	Number of years in each grade, and remarks.
Bowen.								
R. 7.	H. B.	15	20/20	20/20	2	1	4	First year in city school. Cleft hard & soft palate, hare lip, impediment in speech.
R. 8.	M. M.	13	20/20	20/20	12	10	4	2 in 4, 2 in 3.
	C. P.	15	20/20	20/20	9	8	4	3 in 3, 2 in 1.
R. 10.	D. E.	13	20/20	20/20	5	12	4	2 in 4.
R. 7.	J. S.	12	20/20	20/30	12	12	3	2 in 3, 2 in 2, 2 in 1. Adenoid.
R. 5.	W. L.	12	20/20	20/20	12	12	3	No record.
	R. W.	12	20/20	20/20	12	12	3	2 in 2, 3 in 1. Adenoids.
	G. S.	12	20/20	20/20	?	?	3	2 in 3, 2 in 2.
	B. R.	12	20/100	20/50	12	12	3	Only 3 years in this country.
R. 6.	B. D.	12	20/30	20/30	12	12	4	No record.
	E. W.	13	20/20	20/30	12	12	3	2 in 3, 2 in 2.
R. 7.	G. W.	12	20/20	20/20	12	12	3	No record. Adenoids.
	H. W.	11	20/20	20/20	12	12	3	No record. Adenoids.
Greenleaf.								
R. 8.	M. C.	10	20/200	20/140	12	12	4	2 in 4, examined by request, not over average age.
	C. R.	14	20/30	20/70	12	12	4	2 years in city schools.
R. 6.	S. M.	12	20/40	20/20	12	12	3	2 in 3, 2 in 1.
R. 5.	R. W.	13	20/40	20/40	12	12	4	2 in 4.
	L. F.	12	20/20	20/20	9	12	3	2 in 3, 2 in 2.
R. 6.	L. S.	12	20/30	20/30	11	7	3	2 in 2, 2 in 1.
Jefferson.								
R. 17.	M. W.	13	20/20	20/70	12	12	4	2 in 3.
	E. M.	13	20/20	20/70	12	12	4	1st year in city schools.

School.	Pupil.	Age.	R.V.	L.V.	R.E.	L.E.	Gr.	Number of years in each grade, and remarks.
Jefferson.								
R. 6.	R. L.	13	20/70	20/30	12	12	3	3 in 3, 3 in 2. Stammering speech.
R. 5.	R. H.	13	20/20	20/20	12	12	4	Adenoids. First year in city schools.
	W. K.	11	20/20	20/20	12	12	4	No record.
	E. B.	12	20/70	20/20	12	12	4	No record.
	O. M.	12	20/20	20/20	12	12	4	No record.
	F. C.	12	20/20	20/20	12	12	4	2 in 3, 2 in 1.
	W. F.	12	20/20	20/20	12	12	4	2 in 4, 2 in 1.
	J. C.	12	20/70	20/70	12	12	4	2 in 3.
	M. V.	12	20/30	20/30	12	12	4	2 in 3, 2 in 2.
R. 14.	L. H.	10	20/140	20/140	12	12	3	2 in 3.
R. 14.	C. S.	12	20/20	20/20	12	12	3	2 in 3.
R. 16.	G. R.	15	20/30	20/30	?	?	5	1st yr. in city schools.
R. 5.	F. R.	12	20/20	20/20	12	12	4	No record. Adenoids.
	W. S.	14	20/20	20/20	12	12	4	1st yr. in city schools.
	E. G.	13	20/70	20/70	12	12	4	3 in 3.
	F. B.	12	20/400	20/200	12	4	4	No record. Polar Cataract, nystagmus.
	C. S.	13	20/20	20/20	1	1	4	2 in 3.
	L. B.	13	20/20	20/20	7	12	4	No record.
R. 17.	B. S.	12	20/20	20/20	9	9	4	2 in 3.
R. 9.	A. C.	13	20/20	20/20	5	12	4	2 in 3.
R. 6.	J. H.	12	20/30	20/30	7	6	3	No record.
R. 14.	N. T.	12	20/20	20/20	8	12	3	2 in 1.
Smallwood.								
R. 8.	I. W.	11	20/20	20/20	12	12	3	2 in 3, 2 in 2, 2 in 1. Adenoids.

School.	Pupil.	Age.	R.V.	L.V.	R.E.	L.E.	Gr.	Number of years in each grade, and remarks.
Smallwood.								
R. 8.	A. F.	11	20/100	20/20	12	12	3	2 in 3, 2 in 2, 2 in 1.
	J. K.	11	20/20	20/20	12	12	3	No record. Adenoids.
R. 6.	A. B.	12	20/20	20/20	12	12	4	2 in 3, 2 in 1. Adenoids.
	E. D.	12	20/40	20/40	12	12	4	2 in 3.
R. E.	L. B.	9	20/20	20/30	12	12	2	2 in 2, 2 in 1.
	E. D.	10	20/20	20/30	12	12	2	2 in 2, 2 in 1.
	M. O.	10	20/20	20/30	12	12	2	2 in 1.
	A. L.	9	20/100	20/40	12	12	2	2 in 2, 2 in 1.
	R. P.	12	20/20	20/30	12	12	2	1st yr. in city schools.
	D. G.	10	20/20	20/20	12	12	2	2 in 2, Adenoids.
	M. B.	9	20/30	20/30	12	12	2	2 in 2.
	B. D.	9	20/30	20/30	12	12	2	No record.
R. 8.	H. G.	12	20/70	20/20	1	5	3	2 in 3, 2 in 2, 1 in 1.
	S. S.	11	20/20	20/20	5	12	3	2 in 3, 1 in 2, 1 in 1.
	F. K.	14	20/20	20/30	12	6	3	No record.
R. 11.	V. B.	11	20/20	20/20	6	12	3	2 in 3, 1 in 2, 1 in 1.
R. 6.	A. D.	13	20/20	20/20	12	5	4	2 in 3, 2 in 2, 1 in 1.
R. 13.	O. H.	12	20/20	20/20	12	11	4	1 in 3, 1 in 2, 1 in 1.
	T. F.	12	20/30	20/30	11	8	4	2 in 4.
	F. McD.	12	20/20	20/20	8	10	4	2 in 3.
R. 14.	K. P.	11	20/20	20/20	12	5	3	1st yr. in city schools.
	L. C.	9	20/50	20/40	5	6	2	2 in 2, 2 in 1.
	B. G.	9	20/20	20/40	11	9	2	No record. Adenoids.
	E. G.	9	20/30	20/30	?	?	2	2 in 2, 2 in 1.

Dr. Woodward said he had hoped to hear some expression of opinion from physicians outside the Health Office. He believed that much good is accomplished by the present system, but the service needs more men with better pay to accomplish all that is desirable and to go into the work more thoroughly and upon a more scientific basis.

When the Government undertakes compulsory education it assumes a grave responsibility ; when children are compelled to enter the schools the Government owes it to them to safeguard them from injury while in attendance. He believes that the public schools of the District should have a carefully conducted system of physical examinations, and the progress of the children should be conditioned upon physical as well as mental attainment.

Dr. Chappell said that he was glad of the opportunity to express his views upon the subject, inasmuch as it was one in which he had long been interested. The Society's committee on Public Health, of which he was chairman, reported upon the advisability of medical inspection of the schools some years ago. Its recommendations were far in advance of what the Society recommended and the Society's recommendations far in advance of what was obtained. He believed then and believes now that the Society made a mistake when it failed to indorse the recommendations of the committee practically as reported to the Society. The present system accomplishes very little, indeed but a tithe of what is needed. The general practitioner can be depended upon to exclude from the schools the more serious contagious diseases. But the work of the medical inspector should include everything that concerns the physical welfare of the child.

Under the present system of education the physical side of the child is sacrificed in order to develop the mental side of the child. The future of the race depends upon the education of the moral and physical qualities of its children as well as the mental, and the medical profession ought not to be content with the present system of medical inspection, but should put forth every effort to raise it to the highest state of perfection regardless of the cost.

Dr. J. D. Thomas said that he was in the peculiar position of wishing to express his personal opinions, which were in some respects contrary to what might be expected of a medical inspector of schools, and contrary to the opinion of the Health Officer. He believes that the system of inspection in vogue in this city is sufficient and good ; as the Government compels children to go to school, it should guarantee proper buildings, surroundings and protection from contagion. In this respect medical inspection has done much good and is doing more good each year.

But he is unalterably opposed to the extreme measures adopted in other cities, and advocated for Washington. He is opposed to the prevailing tendencies to paternalism, and believes that the Government is teaching parents to shirk natural and just responsibilities.

Dr. Motter said that the discussion had gotten broader than the subject and had come to involve the whole public school question. As regards Dr. Chappell's remarks, he believes they are too pessimistic. He was a member of Dr. Chappell's Committee on the inspection of local schools, and, in view of the great furor raised at that time, the service now in operation is far better than was to be expected. Whether or not the Government does tend to become too paternalistic is a large question, but to extend the system further at present would awaken opposition. As to the care of the profession in guarding the schools from contagious diseases, physicians are far from being as careful as they should be, as is shown very frequently in reports to the Health Office.

Deficient and defective children constitute a very interesting class. Such children can with advantage receive different treatment from others, and inquiry is now being made with regard to this question in local schools.

Dr. Kober said that as to children physically and mentally defective, much may be said in favor of devising special care for this class. Even some of the Italian schools have for twenty years required special treatment for such children ; of course, that presupposes special medical examination and segregated classes. A notable example is the "Scuole dei rachitici" at Turin. At the same time, mentally sound but ruptured, crippled or deformed children should be treated and restored as far as may be, the indigent cases at the expense of the Government. These measures should not be charged to the account of paternalism, but to the account of public economy.

Dr. Thomas asked if Dr. Kober advocated extreme methods, as alleged to be in use in New York City. To corral school children irrespective of parents' wishes and ability to pay, and remove adenoids, enlarged tonsils, etc.

Dr. S. S. Adams said that there should be no question as to the desirability of school inspection, only as to the methods pursued. Why should not the right inhere in the State to control school children? Why, for instance, should his children be compelled to sit in school rooms with diseased children, or to witness the convulsions of epileptics, or to be retarded by defectives? The State should exercise this right. The late Dr. Christopher lost his life in his work among defective children of Chicago in giving them the special training needed for this class, and his name will be remembered. The community does not go far enough ; some way should be found to limit the production of defective children and remediable defects should be corrected.

Dr. Woodward said that reports in regard to the New York incidents had been greatly exaggerated. He believed that Dr. Thomas' ideas with regard to school children, at least as Dr. Thomas expressed them, were not correct; the brain cannot be successfully cultivated without paying due attention to the rest of the body.

Dr. Kober replied to Dr. Thomas that his record in the investigations of the subject in connection with the Associated Charities will show that he had never advocated gratuitous medical services for individuals who were able to pay for them.

Dr. Heitmuller, in closing the discussion, said that he had not attempted to draw any conclusions from the statistics contained in his paper. He had presented them merely as matters of interest and information upon the subject.

CASE OF MULTIPLE FIBROIDS OF UTERUS.*

By J. W. BOVÉE, M. D.,

Washington, D. C.

Dr. Bovée reported a case of *multiple fibroids* of the *uterus* and presented the specimen, consisting of the uterus and appendages removed by abdominal hysterectomy.

The patient was a colored woman, 38 years old; she had had no children but had three times miscarried some years prior to the operation. The tumor first became noticeable after the last miscarriage and recently had given discomfort from pressure symptoms. There had been no menorrhagia nor metrorrhagia. Upon examination a large mass could be felt through the abdominal wall and by the vagina, the cervix was found high up above the level of the pubes, and the pelvis was occupied by a second growth, denser in structure than that felt in the abdomen.

At the operation, the masses were found to be firm, apparently not degenerating, and free from adhesions. The lower pelvic mass was found to arise from a pedicle attached to the right side of posterior surface of body near ovarian ligament; this mass had pushed up the uterus, so that the cervix was found high, as described, and much elongated from tension. The specimen was removed without the use of ligatures, hemostasis being accomplished by the use of the angiotribe throughout.

Drainage was established by a wick of gauze through the vagina.

Upon section, the upper tumor presented a small focus of microbiotic degeneration. The special points of interest were: the presence of two tumors, one degenerating, the other not; the

* Reported, with specimen, to the Medical Society, Jan. 30, 1907.

elongation of the cervix, and the extreme displacement of the uterus.

Had this woman become pregnant, could she have been delivered *per vaginam?* Probably not. In addition to the impediments to labor with normal presentation, Dr. Bovée spoke of the tendency of such tumors to shift the position of the fetus into transverse or breech presentation.

He did a complete panhysterectomy because of the tendency of such tumors to degenerate into cancer.

CASE OF ECTOPIC PREGNANCY.*

By D. S. LAMB, A. M., M. D.
Washington, D. C.

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The specimens are from a colored woman age 34, a widow; her husband died last July. She first menstruated at 18 years of age; her last menses appeared in February, 1906. She had been married eight years. She had rheumatism in 1897 lasting two months. In 1898 had a "spell" of vomiting lasting one month. About July 15, 1906, she again began to have vomiting, which gradually became worse. Her abdomen became enlarged and a tumor-like mass appeared in left side. October 4th she was admitted to hospital, vomiting brownish liquid with clots of blood; temperature, pulse and respiration about normal. The vomiting continued next day and blood also appeared in the stool; pulse 98 to 120. October 7th she was troubled with hiccough. 8th, still vomiting brownish liquid. 11th, there was involuntary urination. 12th, her eighth day in hospital, she twice expectorated bright blood, and died the same day.

At the post mortem examination the following lesions were found: The body was well nourished, the mammae were large, a dark pigment line was found in the median line of the abdomen, and the usual white lines on the thighs. There was some oedema of the lungs with old adhesions of the left. The stomach showed numerous punctated hemorrhages under the mucous membrane. The liver was fatty. Old adhesions of spleen. The right kidney contained multiple peripheral abscesses the cultures from which

*Reported, with specimen, to the Medical Society, January 30, 1907.

showed streptococci. Left kidney normal. The uterus was slightly larger than normal, and contained a decidua. The right tube and ovary were normal ; the left tube somewhat stretched out and left ovary displaced and contained the corpus luteum. The broad ligament was also stretched out and contained part of the fetal sac, the remainder of which projected into the abdominal cavity and had formed adhesions to the greater omentum and small intestine. The sac contained a fetus of about seven months, much flattened by pressure ; the sac also contained much dark clotted blood. Placenta appeared to be small.

Presumably this was a tubal pregnancy that passed into the broad ligament, and somewhere about the seventh month an artery ruptured and the death of the woman as well as of the fetus was caused by hemorrhage.

Dr. Bovée said the question whether such cases are developed without or within the peritoneal cavity remains undecided. Probably the majority of obstetricians and gynecologists believe that the fetus ruptures directly into the peritoneum. His own operative experience has been that a layer of peritoneum will in most cases be found separating the fetal sac from the peritoneal cavity—that the fetal tumor is no more within the peritoneal cavity than are the intestines.

He does not believe that ectopic pregnancies should be allowed to go to term ; the fetus is too apt to die or to be a monstrosity, deformed by pressure, etc., to subject the mother to the added dangers of advanced pregnancy.

Dr. A. F. A. King inquired whether Dr. Lamb's case was intraligamentous or abdominal? Upon Dr. Lamb's reply that the pregnancy was probably tubal and then became intraligamentous by rupture, Dr. King remarked that what he desired to say was that the usual idea is that ectopic pregnancies originate in a tube and then *rupture* into broad ligament or abdomen as the case may be. He himself believes that the great majority of tubal pregnancies terminate by tubal abortion—expulsion of the fetus from the fimbriated extremity—with the same hemorrhage and pain that characterize tubal rupture.

Dr. Bovée added that the hemorrhage and shock are not so marked in tubal abortion as in tubal perforation ; tubal abortion is more chronic, the hemorrhage and pain are much less severe.

Dr. King also remarked upon the change in the ideas of the cause of ectopic pregnancy brought about by the new conception of fetal implantation. The old idea was that the ovum wandered down the tube and upon entering the uterine cavity fell into a fold of mucosa where it nestled until it became surrounded by the

mucosa as decidua reflexa. But we now find that the ectoderm develops a layer of trophoblasts which lies just within the vitelline membrane; as soon as the ovum reaches the uterus, the vitelline membrane is dissolved and the trophoblasts eat into the uterine wall and hollow out the site of implantation. Now the premature dissolution of the vitelline membrane in the fallopian tube allows the trophoblasts to attack the tubal wall, and tubal implantation is the result.

REPORT OF THE COMMITTEE ON THE WALTER REED MEMORIAL FUND.

Jan. 16, 1907.

Dr. G. Wythe Cook, Chairman, Committee on the Reed Memorial Fund, made the following report:

Your committee has been in existence for a considerable length of time, and in its efforts to secure contributions to the fund in the interests of which it was created has met with many discouragements. Its members have endeavored by personal appeal to give the members of the Society the opportunity to subscribe; many promises have been secured, but the money has not been forthcoming.

A request for $1.00 for this fund was made of each member of the Society upon the printed notices for the stated meeting; this last appeal met with some success, but the total amount secured does not measure up to the expectations that had been entertained nor to the merits of the cause to which it is to be devoted. A list of the contributions secured by this committee is filed herewith.

Certain physicians of Washington made subscriptions to this fund when the movement to raise it was first inaugurated, and before your committee was appointed. Dr. Geo. M. Kober has transmitted to me the list of these contributors, which is also filed herewith. As these amounts were individual contributions, this sum should be transmitted in the name of the donors, and not as a contribution from the Medical Society.

The authorities having charge of the Memorial Fund are anxious to close up the matter, and I therefore ask that authority be given me to transmit the money in my possession to the Treasurer of the Society, and that the committee be discharged.

(Signed) G. Wythe Cook, *Chairman.*

Contributions.—1906, Oct. 19, E. A. Balloch, $2, and J. D. Morgan, $5; Nov. 3, E. O. Belt, $10; Dec. 1, S. S. Adams, $5; Dec. 5, C. W. Brown, $2; Dec. 18, W. K. Butler, $5; Dec. 24, H. D. Fry, $5.

1907, Jan. 4, D. P. Hickling, $2; T. N. McLaughlin, $5; C. S. White, J. F. Moran, G. T. Vaughan and J. T. Johnson, $1; Jan. 5, W. H. Atkinson, $5; Jan. 7, W. Sinclair Bowen, $1; G. N. Acker, $5; H. C. Yarrow, S. L. Owens, W. C. Woodward, C. W. Franzoni, J. W. Chappell, B. G. Pool, J. E. Walsh, Edmund Barry, L. B. T. Johnson, M. G. Motter, J. W. Hodges, S. B. Muncaster, J. E. Mitchell, H. T. A. Lemon, A. R. Shands, V. B. Jackson and T. C. Smith, $1; D. K. Shute, $2; T. A. R. Keech, A. A. Wilson and B. M. Randolph, $1; Jan. 8, Robert Reyburn and W. J. R. Thönssen, $1; Jan. 10, W. G. Morgan, $1; Jan. 12, E. W. Reisinger, $2; Jan. 16, E. L. Morgan and D. O. Leech, $1. Total, $75.00. Dr. Belt's check was destroyed, by order of the Society.

Dr. George M. Kober reported to the Committee the following subscriptions of Washington physicians and others, independently of those from the Society: G. M. Kober, $100; C. W. Richardson, $20; J. W. Bovée, W. P. Carr, A. F. A. King, D. S. Lamb, H. H. Manning, F. S. Nash, J. B. Nichols, W. C. Rives, W. H. Wilmer and Sterling Ruffin, each $10; G. W. Cook, W. C. Cox, G. B. Miller, Z. T. Sowers, I. S. Stone and J. Ford Thompson, each $5; and C. A. Crawford, $1; total, $251.00.

IN MEMORIAM.

The Death of Doctor E. O. Belt.

The following preamble and resolutions were adopted by the Medical Society, January 16, 1907.

Whereas, the Medical Society of the District of Columbia records with the deepest sorrow the sudden and untimely death of Dr. Edward Oliver Belt, one of its most highly esteemed and honored members, be it

Resolved: That the medical profession and the community at large have thereby sustained an irreparable loss; that he was a man of eminent scientific attainments, a Christian gentleman, and

in the practice of his profession displayed at all times the most unselfish devotion in the conscientious discharge of his duties.

That the Episcopal Eye, Ear and Throat Hospital, to which he devoted so many years of untiring and generous labor, stands a memorial to his energy and ability.

Resolved : That this Society tenders its profound sympathy to his widow and the members of his family in their deep bereavement, and directs that a copy of these resolutions be engrossed and sent to them.

Resolved : That these resolutions be entered upon the minutes of this Society and become a part of the permanent records thereof.

Monte Griffith,
Charles W. Richardson,
William H. Fox,
Committee.

The appalling catastrophe which caused the death of Dr. Belt and brought such heart-rending distress to so many homes has cast a heavy gloom over the medical profession of Washington. Coming as it did at the season of the year which ordinarily is one of joy, it intensified the sorrow and solemnity of that shocking tragedy, the outcome of the criminal carelessness of railroad officials and employees. The scenes of that awful night, Dec. 30, 1906, will never be effaced from the memory of those who witnessed its horror, too terrible to dwell upon.

Dr. Belt was born in Frederick County, Maryland, May 19, 1861. He was the son of John Lloyd and Sarah Eleanor (McGill) Belt, whose ancestors were English and Scotch, were among the earliest settlers of Maryland, and figured prominently in the history of that State.

His primary education was received in the public schools of Montgomery and Frederick Counties and his higher education at Frederick College, Md.

He was graduated in Medicine by the University of Maryland in 1886. He began the practice of his profession at his old home in Frederick County, but in the course of a few months was offered and accepted the position of resident physician at the Presbyterian Eye, Ear and Throat Hospital, Baltimore. He remained there two years and then resigned to visit Europe, where he pursued the special studies of ophthalmology and otology in

the University of Vienna and the hospitals of Berlin, Paris and London. Returning to Baltimore, he took a post-graduate course in histology and pathology at the Johns Hopkins University, and was visiting surgeon to the Presbyterian Eye and Ear Hospital.

In October, 1889, he located in Washington, where, in 1896, he originated and organized the Episcopal Eye, Ear and Throat Hospital, which was opened for treatment of patients April 8, 1897. From that time until his death he was an attending surgeon, member of the Board of Governors, Secretary and Executive Officer of the hospital. He devoted to this institution the most untiring and unselfish energy, and it stands a fitting memorial, crowning his life's work.

He was made Professor of Ophthalmology and Otology, Howard University, in 1890, which position he held at the time of his death.

He was a frequent contributor to medical journals, and was the originator of Sponge-Grafting in the human orbit for preventing the sunken appearance following removal of the eye.

His useful life will live in our memories and his work shall live beyond his name and ours.

He married Miss Emily Walker Norvell, May 18, 1899. Three children were born to them, two of whom, Edward and Sinclair, were killed with their father in the railroad wreck at Terra Cotta, D. C., and one other son, Norvell, survives, who, but for the fact that he was in bed with a broken thigh, would also have been with his father and brothers on the same train.

The students and nurses who were brought in contact with Dr. Belt revered him for his justice, his patience and his earnestness. His patients trusted him, loved him. The tender family ties which bound him are sacred beyond words, and the profoundness of our sympathy for his bereaved ones is best expressed in silence. The deepest sympathy has been shown by the entire community for his bereaved widow and other surviving relatives.

Dr. A. B. Storch.

Whereas, on November 30, 1906, God, in His all wise providence, removed from his earthly labors Doctor August Bernard Storch, a member of this Society:

Dr. Storch was sick for nearly 16 months, having suffered a cerebral hemorrhage with subsequent paralysis from which he never

recovered. He was quite a regular attendant upon the meetings of this body, and, while not always entering into its discussions, took a keen interest in the spirit of the meetings, which he regarded, as he said during his illness, a source of great pleasure to him.

Dr. Storch was a very modest, retiring man, a hard worker, thoroughly devoted to his profession, and was much beloved by his patients. He was born in Swartzburg, Germany, October 9, 1843, and came to this country when quite a youth, studied medicine, and graduated at the Iowa University in 1863. He acted as Surgeon in Estes House Hospital during a part of the Civil War, afterward going to Berlin, where he took a course under the eminent Professors Virchow, Von Langenbeck and Frerichs. Returning to this country he practiced for many years in the west, and fifteen years ago came to Washington, where he has since resided.

WHEREAS, this Society has lost a faithful adherent, the public a skillful practitioner and an open-hearted, unselfish friend.

Therefore, be it resolved: That we deplore his loss, and share with his bereaved family their sorrow, and hereby tender our heartfelt sympathies, and that a copy of these resolutions be spread upon the minutes, and a copy thereof sent to the wife of the deceased.

Signed: D. OLIN LEECH,
JESSE SHOUP,
HOMER S. MEDFORD,

January 16, 1907. *Committee.*

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, January 7, 1907.—Dr. Jas. Dudley Morgan, President, in the chair; about 90 members present.

The Chair announced the death of Dr. E. Oliver Belt and appointed Drs. Monte Griffith, W. H. Fox and C. W. Richardson a committee to prepare resolutions of respect.

The Society appropriated $500.00 to the Walter Reed Memorial Fund.

Dr. Sowers, for the Executive Committee, reported that the Commissioners had recommended to Congress the enactment of legislation to accomplish the reclamation of the Anacostia flats.

He asked authority to endorse the bill and to co-operate with the Commissioners to secure its enactment. He also read a letter designed to be sent to certain members of Congress, protesting against the passage of a bill "to incorporate the American Medical Union," and asked authority for the committee to send the letter and to proceed in opposition to the measure. The committee was granted authority to proceed as indicated in the report.

The following officers were elected for the year 1907: For President, Dr. D. K. Shute; for Vice-Presidents, Drs. W. K. Butler and J. B. Nichols; for Corresponding Secretary, Dr. T. C. Smith; for Treasurer, Dr. C. W. Franzoni; for Recording Secretary, Dr. H. C. Macatee; for Librarian, Dr. E. L. Morgan; for Board of Censors, Drs. D. Olin Leech, J. F. Moran, F. R. Hagner, J. S. Wall and H. B. Deale.

A rising vote of thanks was given Dr. Jas. Dudley Morgan for his faithful, efficient and impartial discharge of the duties of presiding officer.

The amendments to the by-laws proposed at the stated meeting, July, 1906, were ordered printed and mailed to each active member before the next stated meeting.

Wednesday, January 16.—Dr. D. K. Shute, President, in the chair; about 50 members present.

Dr. Shute was chosen to represent the Medical Society as a Vice-President of the Washington Academy of Sciences.

Dr. Cook, Chairman of the Reed Memorial Fund Committee, made a final report and the committee was discharged. See p. 52.

The Treasurer was instructed to turn over to the proper authority of the Walter Reed Memorial Association the sum of $500.00, including the sum collected by the Society's Committee on the Memorial.

The committee to prepare resolutions on the death of Dr. E. O. Belt read its report, which was accepted. See p. 53. The committee was continued, and directed to prepare a short biography of Dr. Belt for publication in the ANNALS.

The Executive Committee was authorized to urge the passage of a bill pending before Congress for the regulation of the milk supply of the District of Columbia.

The following resolution was adopted: "Inasmuch as this Society has always reposed the fullest confidence in the ability and integrity of Dr. Wm. A. White, Superintendent of the Government Hospital for the Insane, in his management of that institution, *Resolved*, that we now congratulate Dr. White upon the vindication he has received from the Congress of the United States on his administration of his office."

The Chair announced the appointment to the Executive Committee of Dr. J. D. Morgan, vice D. K. Shute, to serve 4 years; and Dr. J. D. Thomas, vice W. G. Morgan, to serve 5 years;

and to the Entertainment Committee, Dr. L. H. Taylor, vice J. D. Thomas.

The President appointed the following committees:

Standing Committees for 1907.—Executive Committee—To serve 1 year: S. S. Adams, Wallace Neff, E. W. Reisinger. To serve 2 years: W. C. Woodward, D. P. Hickling, Z. T. Sowers. To serve 3 years: G. N. Acker, E. A. Balloch, J. W. Bovée. To serve 4 years: J. D. Morgan, Louis Mackall, C. W. Richardson. To serve 5 years: J. D. Thomas, G. M. Kober, T. N. McLaughlin. Public Health—J. W. Chappell, Chairman; Truman Abbe, G. W. Wood, Robert S. Lamb, Hobart S. Dye, Anne A. Wilson, John B. Briggs. Essays—T. C. Smith, Chairman; E. A. Balloch, N. P. Barnes.

Special Committees for 1907.—Editing the Transactions—D. S. Lamb, Chairman; W. A. Wells, M. G. Motter. Microscopy—J. B. Nichols, Chairman; Collins Marshall, D. W. Prentiss. Directory for Nurses—T. A. Groover, Chairman; Ada R. Thomas, Monte Griffith. History of the Society—A. F. A. King, Chairman; D. S. Lamb, G. Wythe Cook, C. W. Franzoni, R. T. Holden. Library—D. S. Lamb, Chairman; E. L. Morgan, D. G. Smith. Milk Commission—W. M. Sprigg, Chairman; D. P. Hickling, H. H. Donnally, Elmer Sothoron, J. S. Wall. Committee on Entertainment—F. R. Hagner, Chairman; V. B. Jackson, L. H. Taylor.

The Society ordered that all persons who have been dropped from membership for non-payment of dues be debarred from having their portraits appear in the History of the Society.

Dr. R. S. Lamb reported a case of extensive injury of the cornea. The patient was presented. Discussed by Dr. Griffith. See p. 24.

Dr. C. S. White read the paper for the evening: "Fracture of the Shaft of the Femur." Discussed by Drs. Carr, Shands, Balloch and Groover. See p. 15.

The Committee to prepare resolutions on the death of Dr. A. B. Storch presented its report. The resolutions were adopted. See p. 55.

Wednesday, January 23.—Dr. Shute, President in the chair; many members and guests present.

The Executive Committee reported upon H. R. No. 21,670, "A bill to regulate the production and sale of milk and cream in and for the District of Columbia," which was discussed and adopted.

The results of investigations into conditions under which milk is produced and sold in the District were presented by Mr. K. F. Kellerman, Mr. T. D. Beckwith, Dr. E. M. Santee and Mr. Geo. M. Whitaker, of U. S. Department of Agriculture, and by Dr. Turner, Veterinarian, Health Department. Mr. A. S. Trumble, a milk producer, also spoke.

The thanks of the Society were given to the gentlemen who had addressed it.

Wednesday, January 30.—Dr. Shute, President, in the chair; about 50 members present.

John W. Prafk, Asst. Surg., U. S. Pub. Health and Marine Hosp. Service, and Wm. Roberts, Asst. Surg., U. S. A. (retired), were elected to membership by invitation.

Dr. D. S. Lamb, of the Editorial Committee, reported that: In the January number of the ANNALS there was an editorial on tuberculosis registration purporting to have been written by Dr. Louis Mackall. It should have been signed by the Legislative Sub-committee on Tuberculosis. When this information, however, reached Dr. Lamb it was too late to make the change. This statement was made, therefore, in order that Dr. Mackall should not be placed in a false position and that the credit for the editorial should be properly given.

Dr. D. S. Lamb reported a case of *Ectopic pregnancy*, with specimen. Discussed by Drs. Bovée and A. F. A. King. See p. 50.

Dr. Bovée reported a case of Multiple fibroids of the uterus, with specimen. See p. 49.

Dr. E. P. Magruder's case of Aortic regurgitation with floating liver was discussed by Drs. Claytor, Mackall and J. D. Thomas. [See ANNALS, January, 1907, p. 395.]

Dr. Claytor said that the hepatoptosis was very interesting and very rare. He has seen three cases, including that presented by Dr. Magruder: one was seen in Philadelphia and another at Garfield Hospital here.

Dr. Mackall said the case was of great interest, particularly on account of a presystolic thrill at the apex with no apical murmur, and the presence of the loud murmur at the base with no basilar thrill. The condition suggested to him aneurysm of the heart. The heart was not much hypertrophied, and on that account he did not think that the aortic regurgitation was of long duration.

He believed that the condition of greatest moment was the hepatoptosis, which by pressure and drag on the aorta threatened or had already caused aneurysm. On that account he would urge suspension of the liver after the manner described by LePage. Dr. Mackall believed that such an operation was strongly indicated in this case, in which the heart was already in bad condition and progressively growing worse.

Dr. J. D. Thomas said that the conditions under which he had examined the patient did not justify an accurate diagnosis. The murmur was a very unusual one, and though at first it seemed to be systolic, when compared with the pulse it proved to be diastolic in time, or at least not systolic. Although the sounds did not indicate to his mind aortic regurgitation alone, that condition was present. A pathognomonic sign of that lesion is a double

bruit in the large vessels, and that sign was plainly audible in this case in the femoral artery. Some writers hold that the sign may also be heard in mitral stenosis. The case was of great interest, but he did not think that the sounds were altogether characteristic of aortic regurgitation alone.

Dr. E. P. Magruder said that with regard to the thrill, at present it may be felt equally at base and apex. He had referred in his paper to the double vascular murmur mentioned by Dr. Thomas. He did not think there was any involvement of the right heart. He agreed that possibly the mitral valve also was involved, producing at times the reduplicated or double-murmur effect described by Flint as replacing that of simple aortic regurgitation. As to the time of the murmur, careful study had convinced him that it was diastolic. He had no opinion to offer as to the relation between the floating liver and the cardiac condition.

In the course of the past year, evidences of arteriosclerosis had increased. The pulse had also markedly changed in character, due no doubt to improved mode of living.

Dr. Fremont Smith read the paper for the evening, "Local Arterio-sclerosis." Discussed by Drs. Claytor, D. S. Lamb, R. S. Lamb, Nichols and A. F. A. King.

Wednesday, February 6.—Dr. Shute, President, in the chair; about 36 members present.

On motion of Dr. T. C. Smith, the following resolution was unanimously adopted: *Resolved*, That the Medical Society extends to Dr. Robert Reyburn its cordial congratulations on the attainment of his half century in the practice of medicine. Deserving and possessing, as he does, the respect, esteem and confidence of the medical profession and the community, the Society expresses its hearty good wishes with the hope that Dr. Reyburn's life of usefulness may be greatly prolonged.

Dr. Reyburn thanked the Society.

Dr. Randolph read a paper on Phenol in erysipelas; two cases. Discussed by Drs. Hooe, Lochboehler, A. F. A. King, Reyburn, J. D. Thomas, S. S. Adams, Chappell, Macatee, Mackall and Phillips. See p. 29.

Dr. Heitmuller read a paper on Inspection of schools. Discussed by Drs. Woodward, Chappell, J. D. Thomas, Motter, Kober and S. S. Adams. See p. 35.

Wednesday, February 13.—Dr. Shute, President, in the chair; many members and others present.

Dr. Theodor Schott, of Bad Nauheim, Germany, addressed the Society upon the treatment of chronic diseases of the heart. Discussed by Drs. Kober, Rives and A. F. A. King. See p. 26.

A rising vote of thanks was given Dr. Schott.

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EDITORIAL COMMITTEE.

D. S. LAMB, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W
WALTER A. WELLS, M. D., ... "The Rochambeau.'
MURRAY GALT MOTTER, A. M., M. D., . . . 1841 Summit Place

Editorial.

PHOTOGRAPHS OF MEMBERS.—Since the last report the following photographs have been received, making in all to date 306.

Adams, Roy D.	Howard, Robertson	Muncaster, Magruder
Antisell, Thomas	Jewett, H. M.	Porter, W. W.
Barber, J. M.	Johnson, Louis	Reeve, J. N.
Bayne, J. W.	Keasbey, J. B.	Reily, J. R.
Briscoe, W. B.	King, Benj.	Reisinger, E. W.
Chamberlin, F. T.	Kleinschmidt, C.H.A.	Richards, Nancy
Clark, J. N.	Koones, C. K.	Rhett, H. J.
Claytor, T. A.	Kramer, T. B.	Seibert, E. G.
Collins, C. R.	Le Merle, E. L.	Smith, T. C.
Craig, B. F.	Lincoln, N. S.	Snyder, A. A.
Croggon, Richard	Lovejoy, J. W. H.	Strickler, M. B.
Dawes, Fred.	McKim, S. A. H.	Toner, J. E.
Du Hamel, W. J.	Magruder, G. L.	Tubman, J. R.
Fillebrown, J. P.	Matthews, Alex.	Vale, F. P.
Fitch, A. C.	May, J. Fred.	Watkins, E. W.
Hansmann, T. B. L.	Mayfield, Clifton	Watkins, S. E.
Hoover, C. A.	Mead, F. W.	Werber, Gustavus
Howard, J. T. D.	Merriam, A. C.	Wood, Geo. W.
	Merriam, E. C.	

So far, eleven "groups of eight" have been reproduced in half tone. These groups are made up according to the year of accession of the members to the Society. The completion of this part

of the work is delayed by the failure to receive certain photographs that are necessary to make up the remaining groups. If those members who have thus far not responded to the request of the Committee will attend to the matter at an early date, the grouping will be greatly facilitated.

Neither the Committee nor the Society has any understanding with any photographer as to furnishing photographs of members.

The Committee would like very much to secure the loan of photographs of members who are deceased or absent from the city; these likenesses will be returned as soon as the half tones are made. Some members have already made such loans, and the Committee herewith extends its thanks for the courtesy.

The Personal Histories of Members.—In the latter part of September, 1906, a blank form of request for information was sent to each active member of the Society, the form to be returned, filled out, to the Historical Committee. Many members have thus far paid no attention to the request. In some cases similar blanks have been sent a second time, asking for definite facts; some of these have been returned, others have not.

The Committee wishes to have it distinctly understood that in the forthcoming "History of the Society," the personal records of members will appear, and these records will be based partly on the records of the Society, partly on published biographical sketches, and partly on the statements of the members themselves. If the Society record in any case is meager, if there is no published sketch, and if the member makes no written statement, it is obvious that the record in his case, in the "History" will be incomplete; but the fault will not be with the Committee. It is hoped, therefore, that those members who have so far neglected the matter will promptly attend to it; there is such a thing as a "last call to dinner."

It may be added that the Committee has consulted the following publications, namely: Who's Who in America; American Men of Science; Atkinson's Biographies, 1874 and 1880; Stone's *ditto*, 1894; Watson's *ditto*, 1896; "Washington Post" History of Washington, 1904; Twentieth Century Biographical Dictionary, 1904; and some minor publications.

MANUSCRIPTS OF ARTICLES written by members of the Society, but not read at its meetings, have several times been offered to the Editorial Committee for publication. The Committee has felt compelled to decline publication until after such papers should be read, or unless the author was willing to pay for publication at the estimated rate, namely: $1.50 per page. Several papers have thus been published at the expense of the authors. Of course if the Society authorizes publication without charge, of papers not read before it, the Committee will gladly obey instructions.

SAN FRANCISCO.—To the Medical profession of the District of Columbia, Virginia, West Virginia and North Carolina:

The medical profession of San Francisco lost its medical library, the San Francisco County Medical Society Library, in the fire last Spring. Most of the physicians also lost whatever private libraries they had succeeded in collecting. A committee (named below) has been appointed by the American Medical Association and by the Association of American Physicians to collect and send books to San Francisco, both for the library and for private individuals when duplicate copies are sent on.

Will you send to George M. Kober, 1600 T Street, Washington, D. C., any medical books of value or bound volumes of journals which you can spare? Fairly recent editions of standard text books, foreign text books or bound journals (French, German and Italian), hospital reports, monographs of all sorts, books on special subjects, old classics (*e. g.* Trousseau, Charcot) and the Sydenham Society publications are especially desired.

Acknowledgment of all that is received will be made through the medical journals, and the books will be packed and shipped as promptly as possible.

Signed: Charles L. Dana, *Chairman*, New York City; Geo. M. Kober, Washington, D. C.; Lawrence Litchfield, Pittsburg; Rudolph Matas, New Orleans; H. C. Moffitt, San Francisco; John H. Musser, Philadelphia; William Osler, Oxford, England; Henry Sewall, Denver; C. G. Stockton, Buffalo; W. S. Thayer, Baltimore; Frank Billings, Chicago; E. Bates Block, Atlanta; J. A. Capps, Chicago; T. D. Coleman, Augusta, Ga.; George W. Crile, Cleveland; W. E. Fischel, St. Louis; F. Forchheimer, Cincinnati; Charles L. Greene, St. Paul; Arthur T. Holbrook, Milwaukee; R. C. Cabot, Boston, Secretary.

THE MEDICAL INSPECTION OF OUR PUBLIC SCHOOLS.

So long as the Government undertakes to educate our children, just so long must the Government see that in the educational process they suffer no avoidable impairment of physical or mental or moral integrity. As physicians we are most directly concerned with questions of physical well-being, and for physical well-being we can claim not only such importance and dignity as arise from the bare value of physical health itself but also such as arise from the fact that it is one of the very foundation stones upon which moral excellence and mental education must be built.

Whether the physical health of a pupil is to be good or bad depends upon two factors: one is the adaptation of the school task to the strength and capacity of the pupil, the other is the occurrence or the non-occurrence of infection. If a pupil is overworked, his health suffers. If his body becomes the abiding place of the germs of some contagious disease or of other parasites, the same result ensues. To prevent either of these unfortunate results through the agency of the public schools is clearly the duty of the Government. To do so requires the closest co-operation of the educator and the physician.

In arranging the curriculum of our schools the magnitude of the task assigned during any given period must be gauged by the capacity of the average pupil, and the system of advancement must be such that a pupil of average ability and ordinary industry can go forward with his class without injuring his health in his endeavor to do so. Whenever injury to health, or defect or deficiency of development, occurs during school life it is safest from an administrative standpoint to regard it, until the contrary be shown, as due to school attendance, and to seek at once the cause of the injury.

Injury may originate in any case from unwholesome conditions in the school building—insufficient, excessive or improper light, air or heat, dampness of walls or floors, or any of the conditions that go to make up an unwholesome place of abode; or it may come from excessive study, due to the assignment of lessons too difficult or too long, or, it may be, to the fact that the ambition and industry of the pupil have outrun his physical and mental capacity and that he, instead of being content with a mark sufficient to enable him to pass without discredit, has endeavored to

go forward with the same high rating as his more brilliant and robust fellow pupils. But on the other hand, the cause of sickness, or of defective or deficient development, may lie in the weakness of the pupil from antecedent disease or physical defect; or in unwholesome home surroundings; or insufficient, excessive or improper food or clothing; or an overstrain outside of school duties, either overwork or, what physically amounts to the same thing, overindulgence in the pleasures of society. Any one of the causes enumerated may act alone, but as likely as not two or more may act together to bring on disaster, and the problem in each case is one that must be solved by the facts in that particular instance. In the early discovery and the early removal of the cause lies the salvation of the pupil.

The safe-guarding of the health of the pupil from infection is, in many respects, easier than the safe-guarding of his health from relative overwork. The secret of success lies in the early detection of teachers and pupils suffering from communicable diseases, the rigid exclusion of such teachers and pupils from school until they can no longer transmit infection, and the detection and the exclusion from school of teachers and pupils who may act as carriers of infection. In cases of reasonable doubt we must err on the safe side and, in the interest of the larger number, exclude the suspected teacher or pupil until doubt is resolved into certainty and the right course of procedure becomes manifest. The greatest difficulty with respect to the prevention of the transmission of communicable diseases through school attendance arises from the presence of teachers and pupils suffering from such diseases in forms too mild to attract attention, not merely the attention of the teacher and the medical inspector but even the attention of the infected individual. So far as school infection is concerned, the mild case is dangerous, the severe case is relatively safe.

Clearly the problems that the medical inspection of schools presents require special study and training on the part of those engaged in the service, not merely on the part of teachers and medical inspectors, but also on the part of every officer and employee in the sanitary and educational branches of the Government who are engaged in the work. And in order that this study and training may be duly insisted upon, and compelled if necessary, and that the work may be properly supervised and advanced, a certain leadership is essential. Under the system of inspection

as organized in this District, the duty of leadership devolves upon the health officer. When the system was established, however, this duty of leadership was imposed upon the health officer as a duty added to those that he already had; there was no increase in the working force of the health department to enable the health officer to cast upon some responsible officer of the health department some of his already numerous duties so as to enable the health officer personally to visit schools, to examine pupils as occasion required, to instruct teachers, and personally to determine the net results of the inspection service with a view to their improvement. No provision was made even for the appointment of a competent assistant to do such work; twelve inspectors, with compensation at the rate of five hundred dollars per annum each, were appointed, and no one else. In view of the limited scope of the medical inspection service, no special provision for supervision appeared to be necessary, and the result has been that such supervision as was and is given to the service by the health officer and the other officers and employees in the service of the health department has been given at the expense of their other duties. What is needed now in the first place for the improvement of the medical inspection service is such an adjustment of the working force of the health department as will procure closer supervision of the work of inspectors and teachers, better analysis of the results of such work, and more intelligent and energetic direction of the service so as to bring it to a state of the highest efficiency.

Next to a more active supervision and direction, the medical inspection service needs an efficient system of training teachers for the discharge of their duties. It never will be possible to have every one of the pupils in our public schools—already somewhat more than fifty thousand in number—examined every day by a medical inspector. Nor, if the teachers are properly trained, should it be necessary even to consider such a step. No careful daily examination of every pupil could be made by any reasonable number of inspectors; nor could such an inspection be made by any number of inspectors whatsoever, without seriously interfering with school administration. And, too, a merely superficial examination by a medical inspector could not accomplish so much toward the detection of abnormal conditions as can the careful study of the pupil by a properly trained teacher, extending over from three to five hours each school day and continuing every

school day in the year. The teacher must be relied upon, as a rule, to detect the first evidence of illness or defect, but in order to enable her to do so, the teacher must be trained by competent medical men, and her training must include not only the study of proper text books but also clinical instruction in the examining room. The teacher must be shown the physical signs of diseases or defects, and she must learn from competent physicians how to recognize such signs.

The supervision of the health of pupils by teachers and inspectors must be supplemented by periodical examinations by the medical inspectors to determine whether development is proceeding at a normal rate and whether there are hidden defects, particularly those of eyesight and of hearing, that need attention. Routine examination of this kind should be made at the beginning of the school year, at the middle, and at the close. Statements of the findings, together with all reports showing the results of examinations made because of illness or suspected illness, should be filed in such a way as to make the complete physical history of each pupil available for reference during his entire school life. Needless to say, the making of such periodical examinations would necessitate the appointment of additional medical inspectors, and the filing of the reports would call for the appointment of one or more clerks, but if the physical welfare of our pupils is worth anything, then the cost of such service would, it is believed, yield ample return.

It is not sufficient, however, to devise a system whereby in the merely present interest of a pupil or of a class, a pupil who is sick or poorly developed will be excluded from school. Some one must find out why pupils are sick or poorly developed and whenever it appears that conditions within the school—such as poor lighting or ventilating of rooms, assignment of lessons that are out of proportion to the capacity of the pupil, and other causes—are operating to bring about these results, some one must have the power and authority to see that such conditions are righted. And the careful study of each case of sickness or defect or failure of physical development, as it occurs during school life will, sooner or later, throw much valuable light on the subject of school hygiene and of the effect of school attendance on the health of the child.

It is certainly no part of the medical inspection service to pro-

vide means for treating sick pupils, except in cases of emergency, or of correcting physical defects. These are matters that are better left to agencies that already exist, the family physician, the physician to the poor, the visiting nurse, the dispensary and the hospital. But the medical inspection service can not keep too closely in touch with each of these agencies. And the physician who undertakes the treatment of a pupil excluded from school by the medical inspection service should be willing sympathetically to co-operate with that service, realizing that the medical inspector is responsible not merely for the health of the pupil who has been excluded, but also for the health of the entire class; that he is bound in case of doubt to act not in the interest of the one excluded pupil but in the interest of the many pupils who remain in school, concerning whom there is no doubt; and, if the case be one in which there is no question concerning the health of any pupil other than the one excluded, that it is the duty of the State, and of the medical inspector acting on behalf of the State, to see that no avoidable injury comes to any pupil through school attendance, even though the parents of the pupil may be willing to take the risk.

What the medical inspection service needs to reach its highest efficiency is closer personal supervision by the health officer, or by a competent medical assistant, acting for him, who can, during the entire school year, devote all of his time to the school inspection service. It needs the better training of teachers to assist in the detection of sick and defective pupils. It needs facilities for making routine examinations from time to time to determine the rate of development of each pupil, which means chiefly the appointment of more medical inspectors of schools. It needs an increase in the clerical force of the health department so as to permit the proper classification of the records. And last, but not least, it needs the active co-operation and support of every physician in the community. This last we may justly hope for first, for such co-operation and support exist even now to a very considerable degree, and co-operation and support call for nothing more than good will and a broad public spirit such as is particularly enjoined upon us by the letter and the spirit of our professional ethics. The other things, desirable though they may be, must be considered in connection with all other demands upon

the revenues of the District Government. We can expect to obtain them only when we have convinced the powers, that hold our purse strings, of the wisdom and the urgent importance of the expenditures that they represent.

Wm. C. Woodward.

The Medical Examiners of the Society.—The book kept by the Board of Medical Examiners up to 1869 is missing. If any member knows where it is or is able to suggest where it is, the Historical Committee would be obliged to him for information.

The Bureau of Public Health and Marine Hospital Service, under date Feb. 12, 1907, announces that an examination for appointment to the grade of Assistant Surgeon in that service will be held April 15 at the rooms of the Bureau, No. 3 B street, S. E. Further information will be furnished on application to the Surgeon General at that address.

TYPHOID FEVER IN THE DISTRICT OF COLUMBIA.

The city papers of Sunday, March 17th, contained extracts from the report received the day before by the District Commissioners from Surgeon General Wyman, of the Bureau of Public Health and Marine Hospital Service, in response to their request, made June 21, 1906, for the aid of that Bureau in determining the cause of the general prevalence of typhoid fever in this District.

The community is under deep obligations for this extremely valuable report. As predicted, it has been most exhaustive, and will prove of great assistance to sanitarians. The report shows that the commission appointed by Dr. Wyman has performed an enormous labor, and has forcibly brought out the conditions existing in the District. The causation of 866 cases of typhoid fever, occurring between June 1st and November 1st, was investigated ; 8 per cent. were attributed to contact, 10 per cent. to milk infection, and 15 per cent. to importations, in all 33 per cent.

The remaining 67 per cent. were considered to be of uncertain origin.

It is a cause for congratulation to the Medical Society of this city, that the recommendations as to the closure of shallow public wells and careful supervision of the milk supply, unanimously adopted by it in 1894 and repeatedly and persistently urged by its officers and members up to the present date, have been again positively insisted upon by this Commission. This earnest endorsement of these recommendations will greatly strengthen the contention of the District Commissioners for the additional legislation, which they have urged upon Congress towards accomplishing these ends. The bacteriological counts of the milk, showing 22,134,289 bacteria to the cubic centimeter, as the average of 172 samples, coupled with an average of 977,315 in the 372 samples examined by the Department of Agriculture in November and December (cool weather), furnish an unanswerable argument for a standard of temperature and a bacteriological test. A bacteriological laboratory is absolutely necessary for the Health Office.

Notwithstanding the Commission was not able (from the synopsis which has been published) to trace any direct connection to the contaminated public wells, it has recommended their closure as being a probable source of danger.

If these wells in the city are dangerous, how much more so are the contaminated water supplies at the dairy farms. The recent bacteriological examinations made during November and December by the Department of Agriculture of the water supply of 60 dairy farms, taken without selection in Maryland, Virginia and the District of Columbia, showed that but 25 per cent. were under the danger line, considering that 500 bacteria to the cubic centimeter, when uncontaminated with sewage bacteria, is the limit of perfect safety ; 27 showed the presence of bacillus coli—45 per cent. Might not these conditions existing at the farms help to account for some of the 67 per cent. not traced in the report recently submitted ? This idea is encouraged by the fact that of the 747 cases contracted in the city, 643 used raw milk, and the knowledge that two cases of fever were in actual existence on two farms at the time of the examination of the water supply, one in Maryland and one in Virginia.

Moreover typhoid fever is quite common in the country. In a

recent issue of the *Maryland Medical Journal* this is positively stated, and cites as a proof that the death rate from typhoid fever in Maryland outside of the city of Baltimore is 2½ times greater than in Baltimore from the same disease. It is well known that but few farmers have sufficient facilities for boiling water to thoroughly cleanse their dairy utensils, and that it is very difficult, even under most careful supervision, to secure proper disinfection of the discharges from fever patients. In many cases in the country these discharges are emptied upon the ground or upon the barnyard manure pile.

It is very gratifying to learn that the investigations will not be discontinued, and that the able Commission will persevere in its efforts to locate the causes, that proper remedial measures may be adopted to avert the disease the coming season.

G. Lloyd Magruder.

NOTES ON NEW AND UNOFFICIAL REMEDIES.

(Continued from page 432.)

Thiosinamine.—Condensation product of allyl thiocyanate and ammonia. Absorption of exudates, lymphatic swellings, scar tissue, etc. 0.03 to 0.1 Gm. (½ to 1½ grains); subcutaneously 0.05 to 0.2 Gm. (1 to 5 grains) in 15 per cent. alcoholic or 10 per cent. glycerinated water solution.

Triferrin.—Ferric paranucleinate; 22 per cent. iron, 9 per cent. nitrogen, 2.5 per cent. phosphorus. Haematinic and acts like lecithin. 0.3 Gm. (5 grains).

Triferrol.—Elixir of triferrin; 15 Cc. (4 fluidrachms).

Trikresol.—Corresponds closely to Cresol, U. S. P.

Trional.—Name applied to Sulphonethylmethanum, U. S. P.

Trioxymethylene.—Paraformaldehyde. Antiseptic and escharotic. Internally, 0.3 to 1.0 Gm. (5 to 15 grains); externally, 10 per cent. collodion.

Tritipalm.—Fluidextractum Sabali et Tritici Comp. 4 to 8 Cc. (1 to 2 fluidrachms).

Triphenin.—Derivative of paraphenetidin. Antipyretic, analgesic and hypnotic. 0.25 to 1.3 Gm. (4 to 20 grains).

Tropacocaine Hydrochloride.—Local anaesthetic, less poisonous, less mydriatic than cocaine. 3 to 10 per cent. in physiologic salt solution.

Tumenol.—Non-toxic, non-irritant protective and palliative to skin. 5 to 20 per cent. ointment or 10 per cent. solution.

Tumenol Sulphone.—Used undiluted for penciling in eczema.

Tumenol Sulphonic Acid.—In powder; 5 to 10 per cent. paste, and 2 to 5 per cent. aqueous solution.

Tussol.—Mandelate of antipyrine. Antipyretic, analgesic and sedative. 0.05 to 0.5 Gm. (½ to 8 grains) according to age.

Urethane.—Name applied to Æthylis Carbamas, U. S. P.

Uriform.—Compound Elixir of Hexamethylenetetramine, Santal and Saw Palmetto. For adults, 4 to 8 Cc. (1 to 2 fluidrachms).

Uritone.—Name applied to Hexamethylenamina, U. S. P.

Uropherin-B.—Theobromine and Lithium Benzoate. Diuretic. 0.3 to 1 Gm. (5 to 15 grains).

Uropherin-S.—Theobromine and Lithium Salicylate.

Urotropine.—Name applied to Hexamethylenamina, U. S. P.

Urotropine-New.—Name applied to Hexamethylenamine Methylencitrate.

Valyl.—Compound of valeric acid and diethylamine. Sedative, antispasmodic and nervine. 2 to 3 capsules, each containing 0.125 Gm. (2 grains).

Veronal.—Hypnotic. 0.3 to 1 Gm. (5 to 15 grains).

Vibutero.—Elixir Viburni Comp. 8 Cc. (2 fluidrachms) t. i. d.

Vinum Extracti Morrhuae.—Cod Liver Extract with Peptonic of Iron. 15 Cc. (4 fluidrachms).

Xeroform.—Bismuth Tribromphenolate. Non-irritant, non-toxic antiseptic. Adults, 1 to 3 Gm. (15 to 45 grains); children, 0.12 to 0.3 Gm. (2 to 5 grains).

Thus ends the first alphabetic list of the New and Non-Official Remedies tentatively accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Sufficient has been given here to show the purpose and extent of the work of the Council. These articles, as they have appeared in full in the *Journal of the American Medical Association*, with additions subsequently made, have now been collected in the form of a reprint, the first edition of which will bear the date of March 30, 1907.*

Important and valuable as is this work, of even greater importance is the publication of the results of analyses of compounds and products which do not measure up to the claims which have

*This pamphlet of 112 pages, describing about 230 articles, may be had by sending 6 cents in stamps to W. A. Puckner, Secretary, No. 103 Dearborn Ave., Chicago, Ill.

been made for them by their makers. The results of this crusade are to be seen in various directions; on the one hand, there are certain manufacturers who, wholly without authority, have endeavored to create the impression that their products have been approved by the Council; on the other, there are medical organizations whose members have resolved to use only such pharmaceuticals as have been approved. [M. G. M.]

SOME "EXPLODED" PHARMACEUTICALS.

The effects of the Pure Food and Drugs Act, one of the keynotes of which is the honest label, the work of the Council on Pharmacy and Chemistry, and the wider publicity now given to analyses of various pharmaceutic preparations, are producing some very interesting results. According to commercial reports a number of "patent-medicine" concerns have gone out of business, one of them with $81,000 liabilities and practically no assets because it could not legally sell its products under the labels employed.

Acetanilide has been dropped from the notorious antikamnia and acetphenetidin (phenacetin) substituted therefor, and, so far as we are aware, without notice from the manufacturers to the profession that the formula would be changed, or why. Coming nearer home, Tyree's antiseptic powder has recently been circularized under its old formula, and with the alleged endorsements of a number of local men, notwithstanding the fact that analysis has shown that its composition did not correspond with this formula. The report of the Council concludes with this paragraph:

"Whether or not Mr. Tyree is justified in offering our profession a preparation as composed chiefly of borax and alum, when in reality it is composed of boric acid and zinc sulphate, we leave physicians to judge."

In the same category, according to the reports of the Council, may be placed sulpho-lythin, uron and thialion, which with ammonol, orangeine, phenalgin, *et id genus omne*, might well be relegated to the medico-entomologic museum and labeled "humbug."

In Massachusetts, the State Board of Health has prohibited the sale of a number of cocaine nostrums, among them crown catarrh

powder, Dr. Agnew's catarrhal powder, instant cold relief and instant catarrh relief, Pretzinger's catarrh balm and Dr. Cole's catarrh cure. From here, there and everywhere, come reports of the increasing infant mortality from soothing syrups: In Minnesota, one death from Mrs. Winslow's soothing syrup; In Illinois, one from Rex cough syrup; in New York, one from Monell's teething syrup; while in Pennsylvania, Kopp's baby's friend brought down twins at one fell swoop.

Under the head of "The Digestive Impossibilities," the *Journal of the American Medical Association* has published a list of more than thirty combinations of pepsin and pancreatin, representing the products of over a dozen of the largest manufacturing establishments in the country, many of them with the best of scientific equipment both as to men and to methods. "The manufacturers' excuse is that physicians demand such preparations, and that they are simply supplying the demand;" true, no doubt, and yet, any second-year student in physiology ought to know the absurd futility of any such combination.

Those who heard Medical Director Wise's interesting paper on the evolution of the Naval Hospital and the Naval Medical School will remember that he attributed much of the difficulty in filling the vacancies in the naval medical corps to the fact that the medical schools of the country have not been doing their duty. It has been rather broadly hinted that the widespread nostrum-habit, epidemic among twentieth century prescribers, is but further evidence of the same fact. [M. G. M.]

DOCTORS AND DRUGGISTS "DELIGHTED."

One of the interesting and significant features of the past year has been the organization of active, vigorous and enthusiastic local branches of the American Pharmaceutical Association. Particularly noteworthy has been the work which has been accomplished in this way in Baltimore, Boston, Chicago, New York and Philadelphia. One of the prime objects of these organizations has been to secure a more hearty and intelligent co-operation between druggists and doctors, and to promote among the latter a better knowledge, and more frequent use, of the standard drug preparations of the United States Pharmacopoeia and the National Formulary. Joint meetings have been held, exhibits made and

lively discussions raised on topics of mutual interest to the two professions.

In Philadelphia these joint meetings, held in the famous old College of Physicians, the center of medical life and activity there, have been largely attended. Some of the subjects under discussion are the work of the Council on Pharmacy and Chemistry of the American Medical Association, the Federal Pure Food and Drug Law, the debasing influence of popular nostrums, higher educational requirements for pharmacists, indiscriminate renewal of prescriptions, etc.

At a recent meeting of the local association of druggists, a unanimous resolution was passed appointing a committee with power to formulate plans of a similar nature. Some of these gentlemen have already met with one of the minor medical organizations, and, on both sides, there is evidence of the mutual pleasure and profit thus to be attained. It has been suggested that the Medical Society arrange for a joint meeting, perhaps in April. A subject of very immediate and practical interest would be the working of the new pharmacy law, from the standpoint of the physician and the pharmacist; narcotics, the renewal of prescriptions, the "poison" label, and so on. The druggists are prepared to demonstrate that they can make, at our direction, standard U. S. P. and N. F. preparations which shall be just as elegant, quite as efficient and far more reliable than many of the proprietaries for which our patients must pay two or three prices.

[M. G. M.]

Beneficent Influences of Organization.

The beneficent influences of organization, Dr. J. M. Anders, of Philadelphia, states, are easy of explanation, and among the most obvious stands its power to stimulate men to useful tasks. It is undeniably true that the major portion of important and far-reaching constructive work by members of the medical profession is performed under the stimulus of an organized society. Again, the association of men together leads to the establishment of relations which play no minor part in their mutual advancement. To belong to the county medical society, then, is a necessity at the present day, if the physician would take advantage of the principal means at his command to advance himself in the profession. Organization means progress, not alone to the individual member, but to the profession, for by organization the profession gains added weight, influence, dignity and honor.—*Jr. A. M. A.*

REPORT OF THE EXECUTIVE COMMITTEE ON THE "MILK BILL."*

WASHINGTON, D. C., *January 10, 1907.*

The Executive Committee of the Medical Society of the District of Columbia has carefully considered H. R. 21,670, 59th Congress, 2d Session, "A Bill to regulate the production and sale of milk and cream in and for the District of Columbia," and recommends favorable action.

The importance of milk as an article of diet for all classes, but especially infants, invalids and the sick and convalescent, is generally conceded. It has also been demonstrated that such hydra-headed diseases as scarlet fever, diphtheria and cholera infantum have been disseminated in the milk supply, that typhoid fever epidemics have been thus caused, and that milk may be the vehicle of the germs of tuberculosis and other infectious diseases and morbific agents. For all these reasons the production of clean, wholesome milk is considered today as one of the most important public health measures, and H. R. 21,670, provides the means by which this object may be accomplished. The provisions of the Bill are reasonable and absolutely essential for the attainments of this purpose. The reasonableness of the Bill may be judged by the fact, that Section 6, places the limit of milk bacteria at 500,000 in each cubic centimeter. As a matter of fact, Bitter, an authority on sanitary milk, claims that the maximum limit for milk that is fit for infant food is 50,000 germs per c.cm.

In April and May, 1898, Dr. E. A. de Schweinitz, of the Biochemic Laboratory of the Department of Agriculture, examined 31 different samples of milk taken at random, from as many dairy wagons in Washington. Of these one showed 2,500, one about 4,000, five others between 10,000 to 15,000, six between 30,000 and 50,000 and the remainder more than 50,000 per c.cm.; the average number of bacteria in the market milk was about 52,000. Hence it cannot be said that Section 6 is unreasonable and impracticable when it limits the number to 500,000.

Milk when it leaves the udder of the cow is practically sterile, the average number of bacteria being less than 300 per c.cm. By far the majority of germs gain access to the milk when the milking is done in a dusty stable, or from excrementitious matter adhering to the teats and udder of the animal. These germs multiply with astonishing rapidity whenever the temperature of the milk is above 50 F. A temperature below 50 F. practically inhibits germ proliferation, and this object is easily accomplished by prompt cooling of the milk and keeping it at a temperature below 50 F., except as may be necessary in the process of pasteurization or

* Reported to the Medical Society, January 23, 1907.

sterilization, until the milk is delivered to the consumer. This necessitates, to be sure, the use of ice whenever the temperature of the air is above 50 F., and the producer very naturally argues that it involves increased cost of production.

The intelligent and progressive dairyman has long since recognized that the use of ice will prevent souring of the milk regardless of high temperature and thunder storms, and that the use of ice has been a source of profit rather than loss to him. Apart from that, every consumer who believes in a square deal recognizes the fact that the production of clean, sanitary milk will increase the cost of production and that the producer is entitled to adequate compensation. Some farmers maintain that they have no opportunities for buying or securing ice, and use this as an argument against the provision of Section 6, requiring the cooling of the milk. Dr. G. Lloyd Magruder, with commendable zeal and thoroughness, has investigated this question in a perfect spirit of fairness to the producer, and finds that the N. Y. Central R. R. authorities use about 1,200 pounds of ice per trip for milk refrigerator cars, and the B. & O. R. R. appears to be in position to purchase ice at a cost of $1.00 a ton. The possibility of ice production at the various milk farms, however, is clearly demonstrated by a letter from Professor Willis L. Moore, Chief of the U. S. Weather Bureau, to Dr. Magruder, showing that for the last thirty years there was but one winter, that of 1889–90, during which ice could not have been gathered from ponds in this vicinity. (See appendix marked "A.")

The principal cause of infantile mortality has long since been recognized to be dirty milk causing undue germ development under favorable temperature conditions, and while the mortality from diarrhoeal diseases of children has been much decreased since the enactment of our first Pure Milk Law in 1895, it will be seen that it is still very excessive. According to the census of 1900 the infantile mortality per 1,000 births in the so called Registration States was as follows:

	Infantile mortality per 1,000 births.	Tyyhoid fever rate per 100,000 of population.
District of Columbia,	274.5	80.7
Rhode Island,	197.9	23.8
Massachusetts,	177.8	22.3
New Hampshire,	172.6	16.8
New Jersey,	167.4	21.1
New York,	159.8	24.4
Connecticut,	156.8	27.4
Maine,	144.1	28.8
Vermont,	122.1	31.1
Michigan,	121.3	28.1

INFANTILE MORTALITY AND TYPHOID FEVER RATES ACCORDING TO CITIES.

Charleston, S. C.	419.5	125.4	Norfolk, Va.	284.6	57.9
Savannah, Ga.	387.5	38.7	Lowell, Mass	275.5	19.0
Mobile, Ala.	344.5	80.6	Washington, D. C.	274.5	80.7
Key West, Fla.	311.8	40.9	Baltimore, Md.	235.1	34.8
Biddeford, Me.	311.6	80.5	New Orleans, La.	229.2	66.5
Atlanta, Ga.	306.0	109.0	Detroit, Mich.	201.2	18.9
Fall River, Mass.	304.7	21.9	Philadelphia, Pa.	201.9	37.8
Lynchburg, Va.	301.7	90.0	Kansas City	168.8	40.9
Richmond, Va	300.7	77.6	Indianapolis.	173.5	45.5
Laconia, N. H.	294.6	24.9	Springfield	167.4	55.6
Shreveport, La.	293.5	187.3	New York	189.4	17.3
Jacksonville, Fla.	287.6	66.8			

While there are other causes which determine this frightful infantile mortality none are more potent than the quality of the milk in hand-fed babies.

The investigations of the Department of Agriculture, recently conducted at the earnest solicitation of Dr. Magruder, and Dr. Hickling, Chairman of the Public Health Committee of the Board of Trade, reveal a deplorable condition of the milk farms which supply the Washington market, and strongly suggest that not only our excessive infantile mortality, but also the undue prevalence of typhoid fever, may be checked by the enactment of the proposed milk legislation.

The Department examined between October 27, 1906, and December 3, 1906, 372 samples of market milk, the average number of germs per c.cm. being 977,315, which is a very bad showing when compared with the examination of Dr. De Schweinitz, in April and May, 1898. The bacteriological examination of the water at the various dairy farms conducted by the Department of Agriculture shows that but 19 out of 44 samples of the water contained less than 500 germs per c.cm., and 18 of the 44 samples showed the presence in rather large numbers of *bacillus coli*. The report, signed by Secretary Wilson, states: "The bacteriological results of our incomplete survey are suggestive of the possibility of similar unsanitary conditions obtaining at most of the dairy farms supplying the District of Columbia." (See Appendix "B.") Professor W. T. Sedgwick, in a letter to Dr. Magruder, dated Jan. 3, 1907, writes: "I should say that all of the wells under consideration which had more than 100 bacteria per c.cm. were to be classed as suspicious, and that those having 500 or over were in all probability polluted." (See Appendix "C.") Mr. Theodore Horton, Consulting Engineer of the New York State Department of Health, under date of December 31, 1906, writes to Dr. Magruder: "I agree with you that improvements along the lines of more sanitary milk supply are most important to the future lowering of the death

rate from typhoid fever at Washington." (See Appendix "D.")

In conclusion, your Committee is of the opinion that there is nothing strained in the requirements of the proposed legislation. Apart from the salient reasons adduced in this Report sufficient evidence has been presented in Senate Document No. 441, 57th Congress, 1st Session; and by the enactment and enforcement of the proposed Bill we may hope to obtain such a standard of milk as will not only effect a decided reduction in infantile mortality, but will render dissemination of infectious diseases through the milk supply a matter of history only.

(Signed), Z. T. Sowers,
Chairman.

Appendix "A."

United States Department of Agriculture,
Central Office of the Weather Bureau,
Washington, D. C., *December 29, 1906.*

Dr. George L. Magruder,
4 Jackson Place, N. W., Washington, D. C.

Dear Sir: In regard to the formation of natural ice in this vicinity during the winter season, I beg to say that on examining the records of daily minimum temperature in this city for the last 30 years, I find but one winter, viz: that of 1889–90, during which ice could not have been gathered from ponds in this vicinity. The winter of 1889–90 was by far the warmest that has been experienced in the last fifty years; the mean daily minimum for the month of January, 1890, was nearly 4 degrees above freezing; for February, 3 degrees above, and for December, 1889, it was 4 degrees above. In ordinary winters there is no reason why a fair crop of ice from 4 to 8 inches in thickness cannot be harvested. The tendency among farmers and others who gather their own ice is to wait until the ice attains a thickness of about 8 inches, and thus they sometimes fail to gather a crop, since in warm, open winters ice rarely forms of a greater thickness than 3 to 4 inches. Last winter, it may be remembered, was mild and open, and there was some fear expressed of a failure in the ice crop. Notwithstanding the open season, ice formed to a thickness of 3 to 4 inches in this vicinity and a fair crop was harvested. In order to insure a crop each year it is imperative that an artificial pond be created, if no natural one is in existance, since failure will occasionally be met if dependence for an ice supply be wholly placed upon running streams.

Very truly yours,
(Signed) Willis L. Moore, *Chief U. S. Weather Bureau.*

Appendix "B."

Department of Agriculture,
Washington, D. C., *December 14, 1906.*

The Honorable, the Commissioners of the District of Columbia, Washington, D. C.

Sirs: At the suggestion of Dr. G. Lloyd Magruder, of this city, a few weeks ago we agreed to assist the District of Columbia by making a bacteriological examination of the water at the various dairy farms in the vicinity of Washington.

With the belief that the data secured may in some instances be of considerable importance to you, I inclose a copy of our results, showing the dairy wells visited, the time of examination, the number of bacteria to the cubic centimeter, and the presence or absence of the colon bacillus in several one-cubic centimeter samples from each well examined. A careful examination of the tables will show the rather serious condition that seems to obtain generally.

It is, of course, too much to expect that water from springs and shallow wells shall equal properly filtered water in its bacterial flora. However, assuming five hundred bacteria to the cubic centimeter as a reasonable limit for bacteria in good well water, from the samples taken it seems that but nineteen out of the forty-four samples could be classed as good. The qualitative reactions suggest conditions even more serious, as eighteen out of the forty-four samples showed the presence in rather large numbers of *bacillus coli*. This is not necessarily an absolute condemnation of the water examined, yet it must be admitted that bacteriological evidence is an essential, if not the essential, element of the sanitarian's determination of the safety of a water.

The bacteriological results of our incomplete survey are suggestive of the possibility of similar unsanitary conditions obtaining at most of the dairy farms supplying the District of Columbia. Constant bacteriological examinations should be made to trace out these sources, or possible sources, of typhoid fever and other diseases. Such investigation would require the entire time of a large and especially trained staff, and it seems unfortunate that the Health Department of the District of Columbia should be compelled to rely upon the occasional service which may be accorded by the Government laboratories and which, of course, in emergencies is gladly given. I am glad to learn that you propose to request an appropriation to undertake this important work. Our experience in such work leads me to believe that you will need an appropriation of at least $20,000 to equip and man a suitable laboratory, as it is essential to have a trained and able head and competent assistants for a laboratory of this character, and it seems to me improbable that you will be able to secure a properly equipped head for such a laboratory for less than $2,500 to $3,000.

Respectfully,
James Wilson, *Secretary.*

Appendix "C."

Massachusetts Institute of Technology.
Boston, Mass., *January 3d, 1907.*

My Dear Dr. Magruder:

I am much interested in your letter, which I find on my table this morning, and I hasten to reply so that you may hear from me the first thing tomorrow morning. I should say that all of the wells under consideration which had more than 100 bacteria per cubic centimeter were to be classed as suspicious and that those having 500 or over were in all probability polluted.

On the basis of these results obtained in a comparatively cool month I think you would be safe in affirming that the conditions in summer must have been decidedly worse, and the finding of two clear cases of typhoid fever upon farms from which milk was still going to the city amply justifies you in maintaining that a considerable portion of the typhoid fever in the District of Columbia may fairly be attributed to polluted and infected milk.

There is no one number of bacteria per cubic centimeter which will enable us to pronounce water absolutely safe, although the Germans at one time did consider, and perhaps do still, that water having more than 100 per cubic centimeter when discharged from filter is unsafe, and this is probably as good a rough and general standard as has ever been proposed. My own feeling is that well water, particularly when uncontaminated, ought to run a good deal lower than this, although of course I know that occasionally some waters having many more than 100 per cubic centimeter may be entirely safe.

I greatly hope that you may be able to secure the additional legislation which you desire, as well as laboratory for the Health Department. Dr. Woodward is a fine health officer, and ought to have plenty of money and men placed at his disposal. If you see him, please give him my warm regards and tell him that I shall be happy to do anything in my power to forward his work.

Sincerely yours,
(Signed) W. T. Sedgwick.

Appendix "D."

New York State Department of Health,
Albany, *December 31, 1906.*

Dr. G. Lloyd Magruder,
Stoneleigh Court, Washington, D. C.

Dear Sir: I was very pleased to get your letter of December 15th in regard to typhoid fever in Washington, and have taken much pleasure in reading your discussions in regard to the same. I also wish to thank you very much for the valuable report which

you sent me and which I am very glad to possess, having already seen a copy and made considerable use of it in familiarizing myself with the situation at Washington prior to writing my report.

It seems that there is little doubt left in the minds of most of us as to the relation of the filtration plant to the present typhoid fever in Washington, and I agree with you that improvements along the lines of more sanitary milk supply are most important to the future lowering of the death rate from typhoid fever at Washington. I am looking forward with considerable interest and anticipation to the forthcoming report of the Marine Hospital Service, which will, no doubt, show a very thorough investigation of the whole matter and afford more detailed statistics than we have been able up to this time to secure.

Very truly yours,

(Signed) THEODORE HORTON, *Consulting Engineer.*

DEPARTMENT OF AGRICULTURE, OFFICE OF THE SECRETARY.

WASHINGTON, D. C., *Dec. 14, 1906.*

DR. G. LLOYD MAGRUDER,

Stoneleigh Court, Washington, D. C.

Sir: During the latter part of September we undertook co-operative or comparative bacteriological work with the officials in charge of the filtration plant, and I inclose herewith copies of the tabulated results of this work that are almost self-explanatory.

Our own results and the results obtained at the filtration plant are almost identical when the same medium is used and the samples are incubated at the same temperature and for the same length of time. This is shown very clearly in the first table, which gives the results obtained at the filtration plant using our culture media as well as theirs, and the results obtained by us using their culture media as well as ours. Generally speaking, our figures show a slightly larger number of bacteria to the cubic centimeter than do the figures from the bacteriologist of the filtration plant; in our own routine work, where agar is used and incubated at a higher temperature, a much larger number of bacteria to the cubic centimeter is reported. As the American Public Health Association has recommended the use of gelatin at the lower temperature for routine work, the counts obtained upon gelatin should receive the greater consideration, and therefore our results substantiate those obtained at the filtration plant.

I enclose herewith a copy of a letter that I have this day written to the Commissioners of the District of Columbia in regard to the results of our examinations of the water supplies at the various dairy farms in the vicinity of Washington.

Respectfully,

JAMES WILSON, *Secretary.*

COMPARISON OF DEPARTMENT OF AGRICULTURE AND FILTRATION PLANT COUNTS OF PARALLEL SAMPLES OF WASHINGTON WATER.

Place.	Beef Agar. 72 Hr. 24°C.		D. of A. 48 Hr. 20°C.		Gelatin. 90 Hr. 20°C.		Fil. Pl. 48 Hr. 20°C.		Gelatin. 90 Hr. 20°C.	
	D. of A.	Fil. Pl.	D.A.	F.P.	D.A.	F.P.	D.A.	F.P.	D.A.	F.P.
No. 1, The Rockingham.....	60	25	0	9	15	13	15	14	35	18
No. 2, No. 78 D St., S. W.....	50	20	5	2	60	8	30	16	90	28
No. 3, 28th St. and Pa. Ave.....	35	45	0	5	0	15	5	15	20	33
No. 4, Mass. Ave. and 10th St.	75	—?	5	1	15	4	15	11	20	26
No. 5, 1st St. and R. I. Ave.....	75	34	0	8	10	16	0	10	20	24
No. 6, 22d and K Sts., N. W....	270	250	20	100	165	120	70	120	170	120
No. 7, 33d and M Sts., N. W...	70	41	0	11	30	19	30	8	55	26
No. 8, 7th and B Sts., S. E.....	60	120	0	15	45	41	15	18	75	60

EXAMINATION OF WASHINGTON WATER SUPPLY.

Samples taken October 3, 1906.

No.	Time.	Place.	Dept. of Agriculture. No. of colonies. per c. c. Gelatin. 48 Hr. 20° C.	Agar. 72 Hr. 24° C.	Filtration Plant. No. of colonies. per c. c. Gelatin. 48 Hr. 20° C.
1.	9.25	3602 Newark St.....	250	400	130
2.	9.55	Mass. and Wis. Aves.....	105	740	50
3.	10.05	36th St. and Prospect Ave.....	45	95	10
4.	10.25	22d and K Sts., N. W.....	50	65	12
5.	11.05	Arsenal, 4½ St.....	24	60	24
6.	11.20	No. 12 2d St., N. E.....	83	190	83
7.	11.55	4th and G Sts., N. E.....	385	1,265	10
8.	12.35	12th and Kearney Sts., N. E.....	510	45	8
9.	12.55	Catholic University.....	495	750	120
		Samples taken October 10, 1906.			
1.	10.00	3602 Newark St.....	71	160	100
2.	10.15	Mass. and Wis. Aves.....	12	40	5
3.	10.35	36th and Prospect Ave.....	22	135	17
4.	10.50	22d and K Sts., N. W.....	13	70	11
5.	11.30	Arsenal	25	115	16
6.	12.00	No. 12 2d St., N. E.....	26	105	14
7.	12.15	4th and G Sts., N. W.....	10	140	15
		Samples taken October 17, 1906.			
1.	9.55	3602 Newark St.....	14	125	17
2.	10.05	Mass. and Wis. Aves.....	1	50	12
3.	10.20	36th St. and Prospect Ave.....	8	110	24
4.	10.45	22d and K Sts., N. W.....	3	35	12
5.	11.20	Arsenal	7	60	15
6.	11.45	No. 12 2d St., N. E.....	6	95	18
7.	12.00	4th and G Sts., N. W.....	3	60	12
8.	12.35	12th and Kearney Sts., N. E.....	4	90	14
9.	12.50	Catholic University	0	55	37

At the meeting of the Society, January 23d, **Mr. Karl F. Kellerman,** of the Department of Agriculture described the

BACTERIA OF THE DAIRY WELLS IN THE VICINITY OF WASHINGTON, D. C.

During the past few months the City of Washington has been a place of unusual interest to the sanitarian, and many articles

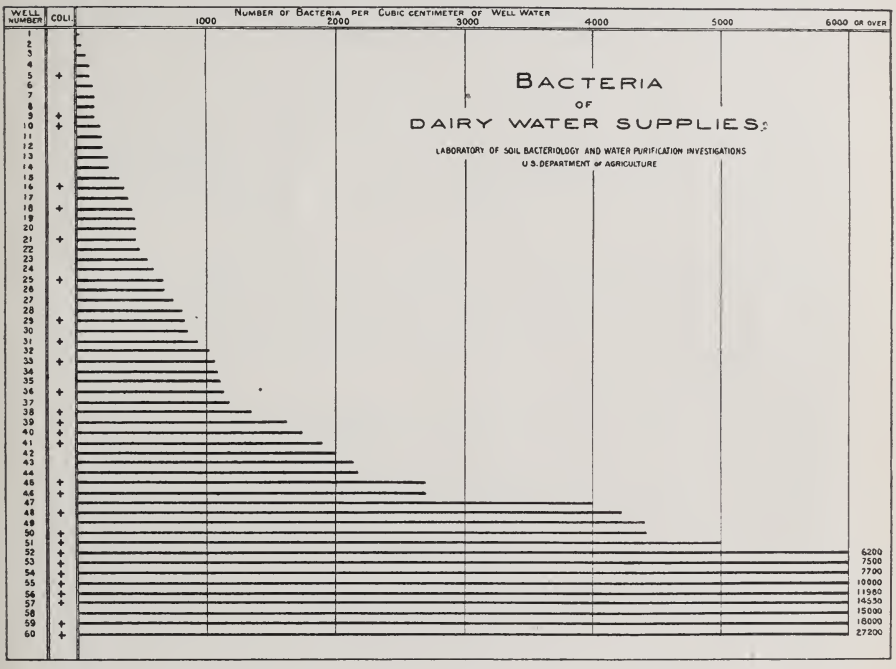
and discussions have been published dealing with the possible causes of the high typhoid rate, both including and excluding the filtered water supply. It perhaps may now be considered a matter of history that the Potomac water after having passed the filtration plant is considered safe. Various other possible causes of the prevalence of typhoid fever are being investigated, and eventually no doubt all the facts in the case will be known.

Naturally, one of the first objects of suspicion after the water supply is eliminated is the milk supply. The investigation of diseases caused by the milk supply is an exceedingly difficult undertaking for the City of Washington. There are approximately 900 dairy farms daily supplying milk to Washingtonians, and the Health Department of the District of Columbia, owing to the lack of funds and small staff, is unable to rigidly inspect and supervise the farms, and in many cases is doubtless unable to trace the milk supply of typhoid fever patients. Because of the apparent need for immediate action, the Secretary of Agriculture agreed to assist in furthering the bacteriological work especially, and with the Health Officer of the District arrangements were made for a somewhat general sanitary survey of the dairy farms.

Only that part of the work which bears directly upon the bacteriological condition of the water supplies of the dairy farms will be dealt with here, and although it is impossible to determine accurately the condition of the milk which is sent out from a dairy farm by the relative pollution of the water supply of that same farm, it may fairly be classed as an inferential method of diagnosing the probable danger of similar pollution occurring in the milk. It is possible, of course, that by using only hot water for rinsing cans and bottles, or even by thorough pasteurization, milk of an exceedingly high purity could be distributed from a farm the water supply of which was badly contaminated, but as Professor Sedgwick says in his Principles of Sanitary Science, "The fact appears to be that the dairy industry is as a rule still in a very primitive state." Therefore it is doubtful if the above precautions, or, in fact, any of the essential precautions, will be taken to preserve the milk from pollution.

In the course of this brief survey, about 60 dairy farms have been visited, and the number of bacteria in the water supply determined, and also the presence or absence of the colon bacillus. To make the tests as strictly representative as possible, the work of plating water samples and inoculating fermentation tubes was carried on entirely in the field, the water being sampled and plated immediately upon being taken from the well or spring. The presence of *bacillus coli* is not indicated unless occurring at least in one cubic centimeter. The accompanying tables will show the condition bacteriologically of the various samples taken, and as every precaution was used to secure representative samples,

it seems fair to assume that this is a fairly accurate chart of the conditions obtaining in the wells and springs.



Of the 60 wells examined, 22 contained below 500 bacteria to the cubic centimeter, and of this number but 6 showed the presence of *bacillus coli* in samples of one cubic centimeter; 9 showed the presence of between 500 and 1,000 bacteria to the cubic centimeter, and of these, 3 showed the presence of *b. coli*; 19 showed the presence of 1,000 to 5,000 bacteria to the cubic centimeter, and of these, 10 showed the presence of *b. coli*; 4 showed the presence of 5,000 to 10,000 bacteria to the cubic centimeter, and of these, 3 showed the presence of *b. coli*; 6 showed the presence of 10,000 to 30,000 bacteria to the cubic centimeter, and of these, 5 showed the presence of *b. coli*.

Although there is a great diversity of opinion as to what bacteriological limits are proper for well water, we may perhaps fairly assume that the wells containing less than 500 bacteria to the cubic centimeter and not showing the presence of *b. coli* are good water supplies. Where local conditions appear to give a reason for a high bacterial count of harmless bacteria, water supplies containing less than 5,000 bacteria to the cubic centimeter and not showing the presence of *b. coli* may be counted as safe water.

The presence of over 5,000 and less than 10,000 bacteria to the cubic centimeter when the colon bacillus is not present may be considered suspicious, and water containing more than this number of bacteria to the cubic centimeter should be considered unfit for use. The presence of the colon bacillus must be studied in connection with the total count, and to some extent in connection with the local conditions, in order to determine the relative importance of its presence; or, in other words, its relative importance as indicating sewage pollution. Under these divisions we would be forced to class the various well waters indicated in the charts as follows: 16 good, 15 fair, 17 suspicious, 12 unfit for use.

Using this survey of a few dairies in various regions in the neighborhood of Washington as the criterion for judging the condition of all of the dairy farms, it would seem highly probable that under the conditions portrayed, much of the typhoid of the City of Washington may be ascribed either directly or indirectly to the unsanitary dairy farms.

Mr. T. D. Beckwith said that the examinations of the water supplies were made directly in the field in order to get as fair tests as possible. Such of the apparatus as required it was double wrapped with paper and then thoroughly sterilized so as to kill all foreign bacteria. With the kit was a large alcohol lamp, so that all culture material could be heated in a bath of boiling water just before using. At each place the suit case was unpacked in the dairy kitchen away from drafts that might carry possible contamination. In every case the sample of water to be tested was taken in a sterile tube after first pumping or letting the tap run for a few moments so as to draw off any stagnant water. All precautions were taken to make the tests as fair as possible.

During the course of the examination, two cases of what was reported to be typhoid fever were brought to our notice. One was in the Rockville (Maryland) district, and we were told that it had been diagnosed by a physician as typhoid fever. The other was in the country around Midland, Virginia, and there we were told by the farmer's wife that her son was sick with fever, probably typhoid. The shipping of milk was stopped at each place as soon as the trouble was discovered.

Medical Miscellany.

Proceedings of the Washington Society of Ophthalmologists and Otologists, Nov. 16, 1906, at J. J. Richardson's, 1016 14th St., N. W.—Dr. R. S. Lamb reported a case of total *blindness* lasting five days, total even for light, in a colored man age 45. The optic nerve was much swollen ; there was marked acute neuro-retinitis. The man had been taking mercury and the iodides for two years. Dr. Lamb stopped these and gave an elixir of iron, quinine and strychnia, with normal salt solution injections. Vision became for near J7 without glasses and J2 with plus 6.5 reading glasses.

Dr. W. A. Wells reported a case of *tumor of maxilla* that began in August, 1906 ; he removed a number of myxomatous polypi ; he also punctured the antrum and the discharge was clear. The patient, a woman, had a broad, smooth alveolar process. Dr. G. T. Vaughan saw her, diagnosed carcinoma and advised operation. Dr. M. Griffith, in the discussion, reported a case in a colored woman about 70 years old who came to the Episcopal Eye and Ear Hospital with inflammation of the eyes, as well as the tumor.

Dr. J. J. Richardson reported three cases of *osteo-sarcoma* that he had seen at the clinic at Freedmen's Hospital ; one died of hemorrhage ; another was under treatment for a year.

Dr. Richardson also read a paper on *functional aphonia*. Dr. J. H. Bryan, in the discussion, said that he had seen this disease only in females between 14 and 20 years of age ; usually it was neuro-muscular. Dr. E. O. Belt referred to a case occurring in a man, published in the *American Journal of Surgery*. Dr. J. Stuart reported a case of hysteria in a colored man, seen at the Emergency Hospital ; Dr. Stuart sat on one arm of the man, pressed hard on the supraorbital nerve, had the man put out his tongue repeatedly, and finally he talked.

Dr. W. L. Robins had seen a case of *hysteria major* at the same hospital, in a young woman, who said in a whisper that it would be necessary for somebody to grip her throat before she could speak aloud. Dr. Robins gripped her throat and she spoke aloud ; there was spasm of both sterno-mastoid muscles. She was afterward given the Faradic current for three weeks and had no recurrence. Dr. H. S. Dye had seen several cases in old soldiers, pensioners ; in one, the trouble began with a family quarrel, and when the man and his wife made up again, his voice returned ; the aphonia had lasted six months. Dr. Dye believed

the trouble was muscular. Dr. Bryan then reported that while serving in the U. S. Navy he had seen a case in a man. Dr. Richardson then said that his last reported case had lasted eight months; it was nervous aphonia; he removed a growth; the throat was quite irritable and the patient neurotic.

Dr. Lamb read a paper on *simple retinitis* (published in WASHINGTON MEDICAL ANNALS, V, 1906–7, page 347). In the discussion, Dr. W. H. Wilmer said that he thought that the diagnosis of simple retinitis was not at all simple; it varied with the observer; a fundus that one called normal, another would call hyperemic; he had seen cases of twenty years standing with hyperemia and yet with little discomfort. He believed the disease was uncommon; was usually associated with disease of the choroid; the particular cause was strain. It was seen especially in hyperopia with astigmatism. Exposure to electric or other bright light was often the cause. He preferred ice to hot applications. Dr. Steuart Muncaster had a patient who had received 400 volts and fell and struck his head; was totally blind four hours; said that he could see streams of blood. The treatment was hot applications and atropia; the man recovered. Dr. Stuart thought the cases difficult to diagnose; he had had a case that he called asthenopia. He said that Dr. Fox of Philadelphia had seen the same case and that he called it oedema of retina; the patient had granular kidneys, could see things around him, but on trying to read, "the letters came and went." Dr. O. A. H. McKimmie thought that cases could often be cured by using proper glasses. Dr. Griffith believed that in some cases overstrain caused the disease; retinitis was a symptom, not a disease. Dr. W. N. Souter believed the diagnosis difficult; he had a patient, a boy, with intense congestion of retina; the eyes of the boy's father were similarly affected; Dr. Souter believed the condition to be evidently a family one. Dr. Belt considered simple retinitis the same as hyperemia of the retina: in simple retinitis there was often much oedema. He remembered a case of neuro-retinitis with normal vision. If there is no pigmentation or choroiditis, the prognosis is better. He had recently had a case with blood pressure 275, and retinal exudate; in two weeks the exudate was absorbed, but the vision was very poor; there was no complication. Dr. D. K. Shute agreed that diagnosis was difficult. Hyperemia of the retina often occurred in children with a high degree of hyperopia and disappeared under the use of a proper correcting glass. He had under treatment a case of exudative retinitis affecting only one eye; he believed that the case was one of anemia. Dr. Lamb, closing the discussion, thought that cases were numerous in cities, because of the many persons who worked under the electric light. He had had cases under observation for a long time, as long as five years; the patients continued at their work and were perfectly comfortable.

Dec. 21, at Dr. Griffith's, The Farragut.

Dr. A. B. Bennett reported a case of *abscess* of *anterior superior* rim of pinna, sero-purulent, in a white woman, age 44; it occurred at each of three consecutive menstrual periods. Was it vicarious? She recovered under the local use of carbolic acid.

Dr. Griffith read a paper on a new *anesthetic* in diseases of the ear. In the discussion, Dr. McKimmie said that he believed that aniline oil was a heart depressant and therefore dangerous. Dr. Bennett had found a mixture of cocain, carbolic acid and alcohol inactive, but some analgesia followed the application of cocain and carbolic acid, and Dr. Griffith admitted the toxicity of aniline oil; it was also very difficult to obtain. Its advantages were in its penetrating power and its power of bleaching congested membranes. Druggists often confused it with oil of anise.

Dr. H. A. Polkinhorn read a paper on *dacryocystitis*. Dr. McKimmie, in the discussion, said that he had no routine method of treatment; he believed that the infection was carried by the nose rather than the conjunctiva, that repeated head colds and consequent enlarged turbinals predisposed to the disease. He preferred to open through the duct; non-suppurative cases were more amenable to treatment through the ducts by simply dilating to the size of a No. 4 probe. He had seen a case opened through the anterior wall in which ulceration and caries resulted; but the patient recovered. Dr. W. H. Fox thought the use of the No. 14 Theobald probe was not scientific or reasonable; No. 4 was large enough; larger ones destroyed tissues. Dr. Griffith said that he sometimes passed a probe through the upper punctum that he could not pass through the lower; he preferred a No. 3. He had recently used a 25 per cent. solution of argyrol, washing out the sac, in the case of an old man with pus in the sac; one washing stopped the formation of pus. Dr. McKimmie said that these cases begin in the nose, caused by repeated attacks of coryza. He recalled a case of 12 years before, in which the canal was slit up and the duct irrigated; the probe met with bony resistance that was overcome by a stout probe; a canula was introduced and is still worn without discomfort and without symptoms of recurrence. Dr. Dye said that patients recover sooner who have both nasal and ocular treatment; removing a spur cured some cases. Dr. Polkinhorn, in closing, said that he went through the anterior wall to give immediate relief; later made a permanent opening in the duct. He had had no fistulae following the first puncture. The tissue destroyed by large probes was fibrous and no injury was done. No. 14 caused no more pain than No. 4. He did not use large probes in acute cases. One case that had been treated for a year with small probes came to him; he used his routine treatment for a year, at the end of which he could still wash out easily, and symptoms had not recurred. After using the larger Theobald probes cases remained well for years.

Jan. 18, 1907; at Dr. Bryan's, 1644 Conn. Ave., N. W.

Resolutions on the death of Dr. E. O. Belt were adopted.

Dr. Bennett reported a case of *leptomeningitis* without early or marked symptoms. In the discussion, Dr. Mathewson mentioned a case of mastoiditis in a child, followed in seven months by cerebral abscess, and the child suddenly died. Dr. C. W. Richardson had not seen any case of marked leptomeningitis without pain; usually the pain was severe. Dr. Bryan thought that perhaps a rise of temperature might have occurred and not been recorded. Dr. Bennett replied that the temperature was recorded at his office, and was normal or subnormal; after admission to hospital it was always subnormal except just before operation, when it rose to 102.

Dr. Souter made remarks on "Steven's" new book.

Dr. W. K. Butler read a paper on *comparative methods of removal of the eye.* In the discussion, Dr. Fox, speaking generally, preferred enucleation; evisceration might cause much trouble, even sympathetic ophthalmia. Dr. Butler had not mentioned the sponge graft. Dr. A. H. Kimball reported a case of dementia in which both eyes were painful and there was anterior staphylomae; he had removed them at one operation, since which the patient had been quiet and apparently free from pain. Dr. Souter believed that Dr. Belt had latterly given up the use of the sponge graft in favor of the gold ball. Dr. McKimmie said that his first operation after leaving college was enucleation; he believed that Snellen's reform eye made any other operation unnecessary except in special cases. Implantation might be preferred in children, in the hope of assisting a natural development of that side of the face. He preferred to cut the optic nerve on the temporal side, because it was more certain and practicable, and liability of recurrence of malignant growths was less, and there was no meningitis. No one now hesitated to enucleate in panophthalmitis. Dr. Shute preferred simple enucleation, now that the reform eye had come into general use. In implantation he sutured the muscles over the ball. Thirteen years ago he implanted a glass ball, suturing the muscles; it gave good results with good motion. In one case the tissue retracted after implantation, and in using adrenalin and cocain to close the opening, the shrinkage from the solution was so great and the opening so enlarged that he abandoned the effort. Dr. Butler said that he closed Tenon's capsule as well as the muscles with sutures.

Dr. Bryan read a paper on *Dentition in relation to suppurative otitis media.* Dr. McKimmie believed in lancing gums; had lanced many. He saw a child about one year ago with chronic suppurative otitis media in which the discharge ceased and the child recovered after the tooth cut through the membrane. Dr. Wells did not think that an erupting tooth could cause the disease; it was more likely that the children had adenoids; any

reflex irritation of the middle ear was aggravated by adenoids and their infective secretions. Carious teeth are common ; it is doubtful if a reflex from the tooth could cause suppurative otitis media. Dr. S. S. Adams disbelieved in dentition as a cause of disease ; about 20 years ago he had examined the records of 10,000 gastro-intestinal cases and in all he had found other and very definite causes beside dentition, such as faulty quantity and quality of food. Sometimes a tooth had erupted ten days before the attack of gastro-enteritis, or it might not erupt till six months afterwards. No such disturbance occurred with the second dentition, and the eruption of the last four of the deciduous set caused no such symptoms. He knew of a child who had swollen gums, and the physician lanced them ; but the child really had scurvy from the use of Eskey's food, and after using orange juice and modified milk, the child recovered. He could not recall a case of middle-ear disease in connection with cutting teeth. Dr. Dye said that he had been used to lancing gums years ago, with much relief of suffering children. Dr. Bryan believed that teeth caused marked and intense congestion of the tympanum by reflex action, and that the suppuration was superimposed on the congested area by the presence of germs in the middle ear.

—R. S. Lamb.

Therapeutic Society of the District of Columbia.—March 9, 1907, Dr. E. L. Morgan read a paper on *Finger-ring lore and its relation to Medicine*. In the discussion, Dr. B. G. Pool showed the right hand of an Egyptian mummy, a child, on the little finger of which was an enamelled ring.—A. J. Hall.

Health Department, District of Columbia.—

Memorandum showing the relative prevalence of certain communicable diseases in the District of Columbia from January 1 to March 1, 1906, and the same period of 1907.

DIPHTHERIA.

1906.			1907.		
Cases on hand January 1.....	36		Cases on hand January 1.....	25	
Cases reported from January 1, to March 1.....	97		Cases reported from Jan. 1, to March 1.....	66	
Cases discharged, recoveries		95	Cases discharged, recoveries		65
Cases discharged, deaths.....		6	Cases discharged, deaths.....		1
Cases on hand March 1.....		32	Cases on hand March 1.....		25
Total cases.....	133	133	Total cases.....	91	91
*Per cent. of fatal cases.....		6.0	*Per cent. of fatal cases.....		1.5

SCARLET FEVER.

1906.			1907.		
Cases on hand Jan. 1	32		Cases on hand Jan. 1.....	18	
Cases reported from Jan. 1, to March 1.....	57		Cases reported from Jan. 1, to March 1.....	52	
Cases discharged, recoveries, ...		59	Cases discharged, recoveries		36
Cases discharged, deaths.....		.....	Cases discharged, deaths.....		1
Cases on hand March 1		30	Cases on hand March 1.....		33
Total cases.....	89	89	Total cases.....	70	70
*Per cent. of fatal cases.....		00	*Per cent. of fatal cases.....		2.7

TYPHOID FEVER.

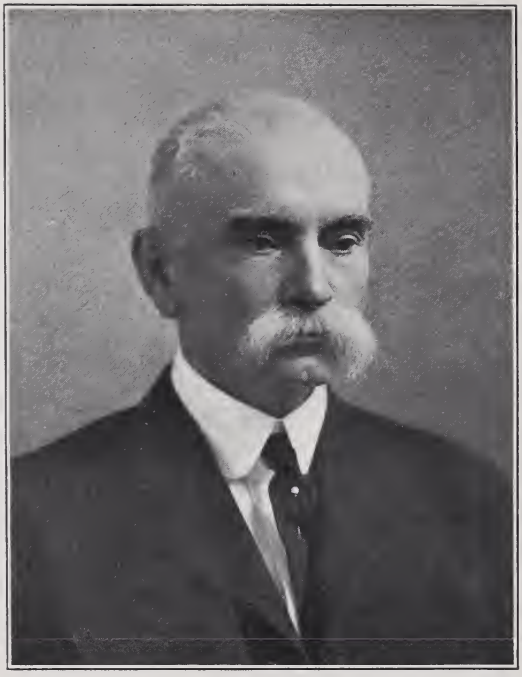
1906.			1907.		
Cases on hand Jan. 1.....	75		Cases on hand Jan. 1	66	
Cases reported from Jan. 1, to March 1.....	48		Cases reported from Jan. 1, to March 1.....	86	
Cases discharged, recoveries, ...		85	Cases discharged, recoveries		85
Cases discharged, deaths.....		10	Cases discharged, deaths.....		13
Cases on hand March 1.....		28	Cases on hand March 1... ..		54
Total cases.....	123	123	Total cases.....	152	152
*Per cent. of fatal cases.....		10.5	*Per cent. of fatal cases.....		13.3

SMALLPOX.

1906.			1907.		
Cases on hand Jan. 1.....	20		Cases on hand Jan. 1.....	0	
Cases reported from Jan. 1, to March 1.....	31		Cases reported from Jan. 1, to March 1	0	
Cases discharged, recoveries, ...		28	Cases discharged, recoveries		0
Cases discharged, deaths.....		2	Cases discharged, deaths.....		0
Cases on hand March 1.....		21	Cases on hand March 1.....		0
Total cases.....	51	51	Total cases.....	.....	.....
*Per cent. of fatal cases.....		6.6	*Per cent. of fatal cases.....		00

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

WILLIAM C. WOODWARD, M. D., *Health Officer.*



JOSEPH FORD THOMPSON, M. D.

COMPLIMENTARY DINNER

AND

PRESENTATION OF LOVING CUP

TO

DR. JOSEPH FORD THOMPSON,

OF WASHINGTON, D. C.,

ON THE

FIFTIETH ANNIVERSARY OF HIS GRADUATION IN MEDICINE
AT THE UNIVERSITY OF MARYLAND,

THURSDAY EVENING, MARCH 7, 1907,

AT

RAUSCHER'S.

Toasts.

Dr. Samuel Shugert Adams, *Chairman.*

—

Dr. Daniel Kerfoot Shute :
"*The Medical Society.*"

Dr. Wm. Phillips Carr :
"*The George Washington University and Hospital.*"

Dr. George Tully Vaughan :
"*The Medical School of Georgetown University.*"

General George Miller Sternberg :
"*The Army.*"

Dr. Thomas Croggon Smith :

Dr. George Nicholas Acker :
"*The Washington Obstetrical and Gynecological Society, and Children's Hospital.*"

Dr. Mary Almera Parsons :
"*The Women Physicians of Washington.*"

Dr. Albert Freeman Africanus King :
Presentation of Loving Cup.

—

Dr. Joseph Ford Thompson.

During the evening a number of popular songs were sung, beginning with "Maryland, My Maryland," Dr. Thompson's native State, and ending with "Auld Lang Syne." Several selections were also sung by a male quartet, and music was rendered at intervals by a band.

After the reception by Dr. Thompson, and the dinner, the toasts proposed by the Chairman were responded to as follows :

The Chairman, **Dr. S. S. Adams** : Fellow Hosts : Weddings have been held at the White House, High Commissions have sat in the halls of justice, gala events have transpired in the homes of diplomats, and great scenes have been enacted at the Capitol ; no one of these outranks in interest the present occasion, when one hundred and fifty members of the Medical Society have come together to honor a colleague who has completed a half century of professional work of great value to this community and honor to himself.

Our guest has faithfully served nearly all the hospitals in the city, and almost from the beginning has taught in the medical colleges, and yet, sad to relate, neither his *alma mater*, the University of Maryland, nor the college of his adoption, George Washington University, has conferred upon him that which he so richly deserved, an honorary degree. I am sure that I am voicing your sentiments when I say that if it were within our province tonight so to do, our guest would retire from this hall with an LL. D. and Ph.D. All of us recall with pleasure his pleasing personality and enthusiastic method of debate in the Medical Society of the District of Columbia, in which he stands four in seniority ; and who is better qualified to speak of him in this connection than our worthy President, Dr. D. K. Shute ?

Dr. Shute said : It is most interesting that the fifty years of Dr. Thompson's professional career coincided with the fifty of the most productive years in the history of medicine. It was in 1839 that Schleiden and Schwann advoted the great theory of the cellular constitution of plants and animals ; in 1860 Max Schultze established the truth, thus perfecting the theory, that the cell-wall was not the factor of primary importance in the case, but the nucleated lump of protoplasm was the essential portion ; it was in 1860 that Rudolf Virchow, the father of pathology, established the fundamental importance of the cell in pathology and gave us the great truth, "*omnis cellula e cellula.*" It was from

1857 to 1873 that Pasteur, a chemist and not a physician, made his great discoveries in the study of fermentation and putrefaction that constitute him the father of bacteriology and of the germ theory of disease. It was from 1860 to 1867 that Joseph Lister, practically applying the truths discovered by Pasteur, inaugurated those procedures in surgery that make him the father of modern antiseptic surgery—one of the greatest contributions to medicine in the whole range of history. Pasteur's and Lister's great contributions to medicine were thus natural outgrowths and extensions of the great cellular theory of Schleiden and Schwann and Schultze. It was in 1880 that Pasteur, in the environs of Paris, made his great and spectacular demonstration of the efficiency of preventive inoculation in anthrax in animals. It was in 1892 to 1894 that serum therapy, notably in the case of diphtheria, was given to modern medicine through the genius of Behring, Kitasato and Roux. All these great and beneficent truths were the outgrowth of the theory of the cellular constitution of all living creatures.

Dr. Thompson's entrance into the world approached very closely to that great epoch when, in 1846, Dr. W. T. G. Morton, a dentist, and not a physician, made that great discovery that entitles him to the honor of being called the father of painless surgery—one of the greatest boons conferred on humanity. Prior to Morton's discovery ether had been a minor drug in the armamentarium of the physician, and a plaything and toy in the hands of medical students. To me it seems profoundly interesting that Dr. Thompson's early years should have been passed in that wonderfully interesting period of medical history when the echoes were yet reverberating of the groans and torments of capital surgery without anesthesia. It was a time to have stirred the blood of all humane physicians living in the infancy of painless surgery.

It was in 1858 that Charles Darwin gave to the world that epoch-making book "The Origin of Species," a book that revolutionized and is still revolutionizing human thought more profoundly than any other work in the history of human culture. It was in 1871 that Charles Lyell published his "Antiquity of Man," proving that man has lived upon this globe for aeons instead of six thousand years.

I have recounted these few among the many great truths that have been developed during the fifty years of Dr. Thompson's

career, because it has seemed to me that he has a rich storehouse to cull from in his more contemplative and philosophical moods; and it seems to me further that he is to be congratulated most sincerely in that the time of his honorable, kindly and successful medical career has coincided with such an interesting epoch in the history of human endeavor.

Because Dr. Thompson has reached the steadiness of three score and ten years is no reason why he should think and speak of himself as an old man. His energy, his capacity for enjoyment, his unimpaired mental activity, his appreciation of friends and of friendship, all stamp him simply as an elderly gentleman, and as having nothing in common with really old men. Oliver Wendell Holmes has said that nature inflicts capital punishment on every human being for the crime of living. It is natural enough to cling to life. We are used to atmospheric existence and can hardly conceive of ourselves except as breathing creatures. We have never tried any other mode of living, or, if we have, we have forgotten all about it, whatever Wordsworth's grand ode may tell us we remember. Heaven itself must be an experiment to every human soul which, perchance, may find itself there. It may require some time for even an earth-born saint to become acclimated to the celestial ether. When old age does in the future really come upon him, and the time comes when he thinks he may be transferred to that celestial ether, may he realize abundantly the old Roman Cicero's conception of old age as the realization and abundance of blessings previously secured; and may he also feel with that fine old Roman "pagan," that when the time comes to pass over among the great majority he may seem to be getting in sight of land and at length, after a long voyage, to be just coming into harbor.

In conclusion I desire to propose the following toast, namely: that when Dr. Thompson is eighty-five years old he will be happy, hearty and young in instincts and feelings, as he is this delightful evening.

The Chairman: Many of those present tonight will always recall with pleasurable emotions Dr. Thompson's happy voice and manner, infusing life and interest into the student body, which without effort gave its attention. There were no naps when our guest lectured nor were there empty seats. In the organization

of the hospital he was as enthusiastic as the youngest physician, and often performed his duties without divulging his own suffering, for self was always of minor importance. Now let us hear from his successor in college and hospital, Dr. W. P. Carr.

Dr. Carr: Mr. Toastmaster and Gentlemen: I have been asked to say a few words about Dr. Thompson in connection with his hospital work, but if you will allow me to digress somewhat from my text I will speak of him as a teacher and surgeon. When I came to the Columbian University, now the George Washington, in 1865, as a medical student, it soon dawned upon me that there were two things I wanted: one was the fifty-dollar prize, because I needed the money; and the other was to be a great surgeon like Dr. Thompson. I think we all consciously or unconsciously take some one for a sort of model, and Dr. Thompson became mine. That I have not made a greater success is no fault of his, but may be attributed to the fact that I was always fonder of play than of work. His lectures and clinics were always intensely interesting to me, and he infused into his teaching an enthusiastic personality that was a most powerful stimulus to earnest endeavor and honest work. One of his most charming traits was his absolute honesty and fearlessness in presenting the failures as well as the triumphs of surgery and of his own work, and his descriptions of cases were so graphic and true and impressive that they made an indelible impression on the student mind.

I might say the same also of the numerous anecdotes with which he occasionally cheered us. Speaking of his own teacher, Dr. Nathan R. Smith, and his original methods, for instance, Dr. Thompson told us of the two rival fire companies of Baltimore at the time he was a student in that city, and of the savage fights they had with each other. They were the Plug Uglies and I forget the name of the other company. One of the Plug Uglies came to Dr. Smith with a nose horribly out of shape as a result of one of these playful affairs and wanted it straightened. Dr. Smith put him on a table, had six big students hold him, laid a block of wood against one side of his nose and with a mallet broke the bones up into small fragments, after which he proceeded to arrange them into shape and model a nose of irreproachable contour, while the melodious swear-words of the patient tinted the air the usual azure hue.

On another occasion, after one of these athletic contests of the

rival companies, I have heard that a man came to Dr. Smith with an ear bitten off. He had the ear carefully wrapped in paper and requested Dr. Smith to sew it on. The Doctor assured him it would be useless as it would not grow, but as the firemen insisted the Doctor decided to comply with the request. After carefully cleansing the wound and the ear, he found it did not fit, and said: "Why man, this is not your ear; it don't fit." But, nothing daunted, the fireman put his hand in his pocket, and pulling out half a dozen more ears, said, "Well, Doctor, try one of these."

In conclusion let me say that Dr. Thompson never shirked his duties. He was always punctually on hand, always ready to respond to the call of the injured and sick, day or night, without thought of fees or recompense, and ready to give the best and highest skill of his time. He is a man of wide culture, vast experience, and unimpeachable integrity, and I feel it a great honor as well as a great pleasure to speak at this dinner, given in his honor and given out of the gladness of our hearts, at seeing him restored to us in good health and spirits.

The Chairman: Strange as it may seem to the younger men of this company, who have happily been nurtured in a purer atmosphere, such a commingling of medical men representing different schools would have been impossible in this city twenty-five years ago. The line of demarcation between the schools was then sharply drawn and the jealousies almost amounted to enmities. No such narrow spirit exists tonight, for Georgetown University not only unfurls her banner in honor of our guest but sends her surgeon, Dr. George Tully Vaughan to tell how much she appreciates Dr. Thompson's long and useful career.

Dr. Vaughan said: It gives me great pleasure, as the representative of the Medical School of Georgetown University, to take part in Dr. Thompson's Golden Jubilee, to help celebrate the completion of his semi-centennial in the practice of medicine.

I wish to congratulate him on having lived during the inception and development of the golden age of surgery, his career having begun shortly after the introduction of anesthesia, and he has seen the evolution and glorious fruition of bacteriology in one of its logical products, Listerism or antisepsis—the two greatest agents in the making of modern surgery. He has seen

the human body divided up for study into so many parts that we now have a specialist for almost every organ. He has seen the evolution of gynecology from the work of Marion Sims, Mettauer and Lawson Tait; of genito-urinary surgery from the work of Civiale, Thompson, Bigelow and Ferguson; of brain surgery from the work of Ferrier, Horsley and Keen; of stomach surgery from the work of Billroth, Pean, Czerny, Woelfler, Von Hacker, Hahn and Connor; of gallbladder surgery from the work of Bobbs, Marion Sims, Lawson Tait and Langenbeck; of surgery of the appendix from the work of Parker, Fitz and Deaver; of the surgery of typhoid perforation from the work of Von Mickulicz and Wilson; of the surgery of the thyroid gland from the work of Theodor Kocher; of general surgery from the work of Gibson, Gross, Smith and McGuire; the development of the x-ray by Roentgen; and numerous others; all helping to make up this golden age of surgery in which Dr. Thompson himself has done a most honorable part.

I have always thought that the proper time to show our regard for a man is during his lifetime, while he can appreciate it; not to wait till after his death and then erect monuments and deliver eulogies of which he probably can know or care nothing.

> Can storied urn or animated bust,
> Back to its mansion call the fleeting breath?
> Can Honor's voice provoke the silent dust?
> Or Flattery soothe the dull, cold ear of death.

Yet it might be somewhat embarrassing to tell a man to his face what we regard as his faults; it might be better to wait and carve them on his tombstone, when he cannot answer back. If we were to tell Dr. Thompson frankly what we think of him, "naught setting down in malice and naught extenuating," we might arouse his wrath by emphasizing his shortcomings, or bring the blush of modesty to his cheek by dwelling on his virtues. Like all mankind, he has his faults, but they weigh light in the scale with his virtues. Still he is very set in his ways, a plain spoken man, who tells you just what he thinks, and when he differs with you, he does not hesitate to say so and to adhere to his opinion with a firmness, a persistence and a perversity which can be characterized only as obstinacy. And in emphasizing his argument he has been known to use language which is never heard in the Sunday School. As for his virtues, if we

could ask the thousands who have known him during his fifty years of work in this city, they would answer with one voice, "they are many." He has lived an upright life, he has been a faithful friend, a truthful adviser, a conscientious physician, and, above all, an honest man, the noblest work of God.

I do not know whether the Doctor intends to retire completely from work; I hope not. There is room for him and the wisdom that comes from his long experience. At any rate, having reached the 70th milestone, he is entitled to rest in the shade of the evening and look back with satisfaction over a well-spent life and with the conscientiousness of having done his duty in bearing the burden and heat of the day; and to the future, whatever it may hold for him, he can look with the eye of the philosopher, if not with pleasure, at least with tranquillity, perhaps with a touch of sadness:

> A feeling of sadness and longing that is not akin to pain,
> And resembles sorrow only, as the mist resembles the rain.

The Chairman: Our guest was an army surgeon in those days when aseptic and antiseptic surgery were unborn; he performed many operations in the military hospitals in this city during the civil war. Let us now hear from the army, through its deserving and distinguished leader, Dr. Geo. M. Sternberg.

General Sternberg said: Doctor Vaughan has referred to the progress made in various surgical specialties, but he neglected to mention one, although I am not sure that any great progress has been made in this particular branch of surgical practice. He did not refer to specialists in the surgery of the *umbilicus*, and yet there are a large number of naval surgeons in the country. I suppose that Dr. Thompson has been fifty years in the practice of medicine and surgery, or we would not be gathered together to do him honor at this time; but looking at him from this point of view I should say that he could not have been more than ten years old at the time of his graduation. He seems to have all the vigor of a young man, notwithstanding the fact that he has recently submitted to a surgical operation which seems to me to be one of the most difficult and desperate that a surgeon can perform. Dr. Thompson himself has done this operation more than once with success. It seems but just, therefore, that he should profit by the advance in surgery to which he has contributed so largely, and yet I am sorry

to say that Dr. Thompson fifty years ago was a very ignorant man. He never sterilized his hands before performing a surgical operation, although I suppose he occasionally washed them. He never used antiseptics and was in the habit of cleaning wounds with a sponge which was washed in water swarming with bacteria. He knew nothing of the tetanus bacillus, but imagined that tetanus was due to some injury to the nerves. The fact that tuberculosis is due to a specific bacillus had not occurred to him. He considered it a very dangerous procedure to expose the peritoneum to the air. However, he gradually acquired this knowledge just as the rest of us have done.

His technical skill as a surgeon was obtained in the military hospitals of this city during the Civil War. At least three great surgeons of this country took a post-graduate course in these hospitals—Weir of New York, Keen of Philadelphia and Ford Thompson of Washington. Dr. Thompson also had some experience in the field, where after several of the battles which occurred in the vicinity of Washington, he went to assist in caring for the wounded.

At that time we did not expect a gunshot wound to heal without suppuration ; if we could have "laudable pus" we were well satisfied. During the recent Spanish-American War a large proportion of the gunshot wounds healed by "first intention." This was partly due to the small diameter and great velocity of the elongated bullet, but to a greater degree to the fact that every soldier carried with him a "first-aid packet," containing sterilized dressings which the soldier himself or a member of the hospital corps applied as soon as possible, and which is often not removed for seven or eight days, when the wounds of entrance and exit are found to be closed without any suppuration.

I consider it a great privilege to join in this testimonial to Dr. Thompson as a man and a surgeon. Although I understand he intends to give up active practice, I trust that he will continue to give his colleagues the benefit of his advice, for his long and successful practice will make such advice most valuable.

The tendency of the young surgeon is to operate whenever there is any excuse for it, and it is well to have a man with large experience to advise not only when to operate, but when to withhold the knife. I would be glad to speak further, but do not intend to give Dr. Adams a chance to call me down; therefore,

with the very best wishes for the health and prosperity of our young friend who is the guest of honor upon this occasion, I will take my seat.

The Chairman: In a story that I will relate I trust that no reflection will be cast upon the next speaker, as it is prompted by this remark: When asked what he would talk about, he replied, "Everything in general and nothing in particular." A gentleman from one of our Northern cities stepped into a colored church in the South and found an old negro preacher in the midst of his sermon describing the flight of the Israelites across the Red Sea. "Now de Red Sea was frizz and Moses and de Israelites dey cross over des as easy, and here come Pharo and all his charyots, and, bredren, dey moves long and dey moves long, and presanly dey gits right in de middle, and heah come de thawr what de Lawd sont, and de ice melt and de whole perseshun went right down to de botum." During the pause, a dapper young colored man in the audience arose and said, "Brethern, I feel called upon to say a few words about our worthy preacher's remarks. Geographers tell us that as the Red Sea is near the equator, freezing could never take place; therefore I must beg to differ with the preacher." The poor old man staggered and looked rather bewildered, but this was only momentary, for he soon began to grin and bow, and raising his hand he waved it in the direction of his opponent, saying, "Well, well, dat jes what I was spectin. I was jes lookin' for one o' dese heah Booker Wasinton niggers. Now, young man, you ain't smart as you think you is, cause de time Ise tellin' 'bout dey want no gogerfers and dey wa'nt no quator."

No one knows our guest better, nor can any one better describe the days of the Medical Society when it had no "gogerfer and no quator," than our faithful Corresponding Secretary, Dr. T. C. Smith.

Dr. Smith said: Fifty years of usefulness in the practice of medicine mark the career of Dr. Thompson. A man's life should not be reckoned by years, but by the use he makes of his time. It should not be asked how many years a man has lived, but has he made good use of his time. Many men live to a great age but fail to utilize the time by making mankind their debtor. Methuselah lived 969 years, but I am not aware that the world is a debtor to him. When a man's record is made we expect to

find in it the salient acts of his life. Methuselah's record shows that he lived a long time, but I am inclined to think he wasted a great deal of it and made a very poor showing. He lived nineteen times as long as our guest has been in medical practice, and yet Dr. Thompson has crowded so much that is worthy of emulation into fifty years, that I repeat that a man's life should not be reckoned by years, but by the use he makes of his time.

What a splendid record is that of Dr. Thompson! Search the minutes of the Medical Society and enough of Dr. Thompson's contributions will be found to make a large volume. Pull down the old charts in the Children's Hospital and see how many bear his name as surgeon in charge of the case. Go into the families whose children have been under his care in that hospital and learn how his name is reverenced and blessed. Garfield Hospital, and in fact all the hospitals in Washington, will bear testimony to his usefulness and faithfulness. The medical profession came to look to him for aid and counsel in time of trial, and always received the benefit of his ripe judgment and experience. There is hardly a man in the profession in Washington who is not indebted to Dr. Thompson for services rendered and for which money cannot pay. He possesses the confidence, affection and respect of the profession. When we heard of his serious illness in London, many a heart felt a pang, and when the Medical Society met I was directed to cable him our sympathy and good wishes. We were not sure the message would reach him in time. I have often wondered if when that message was opened and he was told it was signed "Smith," he didn't inquire, "Is he asking for a paper?"

Surely, then, our friend has reason to be proud of his record. And when the time draws near for him to enter upon his eternal rest, the thought of the good he has done, of the reputation he has made, of the affection of his associates in the profession which he has earned, of the good will of the community, of the blessings showered upon him by the rich and poor whom he has relieved of suffering, should cause him to realize that he has not lived in vain.

Then, tonight, we are glad his health is sufficiently restored to permit him to be with us; glad that we have the opportunity to tender him this courtesy; glad that we are here with him; glad that it has been our lot to be associated with him; glad to be

able to welcome him; glad that he has lived to celebrate this fiftieth anniversary of his graduation in medicine. In fact the inspiration of this occasion makes us all so glad that I feel justified in saying that every heart here is ready, from its fulness, to exclaim "God bless Doctor Thompson."

The Chairman: Our guest was an active member of the Washington Obstetrical and Gynecological Society and was one of the first to perform capital gynecological operations in this city; his training abroad especially fitted him for this work. Well do I remember the hours of anxiety when, upon the death of the lamented Ashford, the Directors of the Children's Hospital awaited the answer of our guest, when they offered him the Surgeon's place in that institution. Although he was in Europe, studying at the time, he accepted the offer, and promptly and at great personal sacrifice returned home to duty.

His work in this institution, especially in corrective surgery, stands out in bold relief. Who, then, is better able to sound his praises than the worthy President of the Washington Obstetrical and Gynecological Society, who is also the senior member of the staff of the Children's Hospital, Dr. George N. Acker?

Dr. Acker said: I have been invited on behalf of the Washington Obstetrical and Gynaecological Society to make a few remarks on this interesting occasion. Dr. Thompson was one of the founders and a former president of the Society, and until he went on the retired list was one of its most active and useful members. In this, as in all the other bodies with which he has been connected, he always performed his duty faithfully. Much of the prosperity and success of the Society is due to his regular attendance and participation in the debates, giving his fellow members the benefit of his extensive surgical experience, thus contributing greatly to the scientific value of the meetings.

From what he said at the recent banquet of the Society I am certain that as long as he has health and strength he will never remain idle, and I hope he will soon take up the work where he left it off last year. Even if he does not engage in active surgical practice, I trust that for years to come he will delight us with many of those interesting and instructive addresses for which he is famous.

I first met Dr. Thompson when I entered the National Medical

College, in 1872. Dr. Riley had been lecturing for some years. Drs. Fristoe, Johnston and King had commenced their lectures in 1871 and Drs. Lee, Drinkard and Thompson gave their first course in 1872. Thus this was to a great extent a new faculty composed of young, earnest and enthusiastic men, masters of their respective branches and devoted to their work. Five of them have gone to their eternal rest. Of the class that entered the college in 1872 three only to my knowledge are alive today, and two of these are here tonight to honor the man whom the class admired for his qualities as a man, lecturer and surgeon.

It has been my great pleasure to have been associated with Dr. Thompson in the Medical School since 1878, in the Children's Hospital since 1884, and many years in the Garfield and George Washington Hospitals. In all these places I have learned to respect him for the fidelity with which he has always executed the trusts reposed in him.

After the death of the lamented Ashford, in 1883, Dr. Thompson was unanimously invited, by the medical staff and directors, to accept the position of Surgeon to the Children's Hospital, and from that time until his resignation last year, he was the only surgeon connected with the hospital. During this time he did an immense amount of work, more so than in any other hospital, for he was on duty the whole year; whereas in the other institutions he only served three or four months during the year. No words of mine, however eloquently expressed, can tell the story of his success in the hospital half as well as the hundreds of crippled children who have been restored to health and happiness through his skill as an orthopedic surgeon.

I congratulate him in the name of the Washington Obstetric and Gynaecological Society on the celebration of the 50th year of his entering on the practice of medicine and upon the long and honorable career he has had in his profession, winning the affection, esteem and respect of all who came in personal contact with him and the admiration and approval of those who know him only through his work.

The Chairman: All of us know our guest's fondness for the gentler sex, but few of us remember how assiduously he labored in their interests when women began to practice in this city. It was he who took the initiative and led the movement which

resulted in permitting the privilege of consultation with members of this Society. Later, when the movement was started, Dr. Thompson was enthusiastic and energetic in the effort which resulted in admitting women to full membership in the Society. It would seem fitting, then, that we hear from the first woman elected to membership—Dr. Mary A. Parsons.

Dr. Parsons said: Tonight I am like the old woman in the nursery rhyme, I need my little dog along to tell me if I be I. The gentlemen may not know it, but the ladies here will bear me out in the assertion, that a girl's "coming out" party is the most important event in a woman's life. And that I have lived to experience two such parties in one life, and this one so much beyond the first in delight, makes me wonder if I have not been born again. And we women owe all this pleasure, this delight, to Dr. Thompson; for he, as far back as 1874, through his generosity, his broadmindedness, his sense of justice, his love for humanity, proposed the amendment and made the fight which resulted in that change of the by-laws of the Medical Association by which women were granted the privilege of consultation, and that movement was the opening wedge to membership, with all its privileges. Dr. Thompson and the late Dr. Busey worked together in that movement and are entitled to our lasting gratitude.

And just here let me say—and will you all please listen, I want to make it emphatic—in these years Dr. Thompson has done more for my poor people than all the churches and all the charitable organizations in the District. I would like to repeat that so everybody may understand.

I do not like to hear so much said about Dr. Thompson being seventy years old; instead he is seventy years gloriously young, and I can prove it.

All of us who have had professional relations with Dr. Thompson know his idiosyncrasy in coming to consultations a little ahead of time. In my first experience with the Doctor I was unaware of this idiosyncracy, and came at the appointed hour to find the Doctor had come and gone. For several days I went around with a chip on my shoulder marked with an enormous W. It has been most truthfully said youth and idiocy are synonymous terms; I found I was demonstrating the proposition, and so became promptly ashamed of myself. But the idiosyncrasy

came in time to become a fixed habit, which at the last served him in good stead, as last fall when he went hurrying up to the gate of Heaven—ahead of time as usual—St. Peter refused to answer to his knock.

Therefore if I were to propose a toast tonight I should ask all to drink to dear, good, old St. Peter, who so promptly turned the Doctor down.

The Chairman: The last speaker of the hosts is by no means the least in stature nor in mirth; nor is he far behind in anything that is new. He often leads the way, yet forgets not the path; hence, no other can excel in speaking of the incidents of the journey which our honored guest and he have taken side by side. Fellow members—the King of Kings.

Dr. A. F. A. King said: In the earliest phases of the world's literature it was customary to set down the important truths of knowledge in verse or rhyme, and from our ancestors we seem to have inherited the habit. Even today it is not unusual after logically demonstrating a proposition to add a couplet from some poet which seems to place the matter beyond dispute. It is not that the things said of Dr. Thompson tonight require the accentuation of rhythmic phrases, but in obedience to the suggestion of several members of the Society, I have tried to put down my thoughts in rhyme.

During a span of fifty years,
  What gruesome sights and doleful sounds,
Accost the surgeon's eyes and ears,
  While he pursues his daily rounds!
What varied sorts of lamentation
From divers kinds of inflammation!
  What notes of pain and grievous sounds,
  From men with different kinds of wounds!
High notes and low; scream, groan and wail,
Throughout the whole harmonic scale.
  Here trembles one in mournful bass,
  With wretched pain and dire grimace,
  A load of buckshot in his face.
Then plaintive cries—most melancholic
From renal or hepatic colic.
  Hear now the frighten'd school-boy's scream,
A shrieking treble whine of woe
With horrid splinter in his toe;

Then complex groans, in various tones,
From one with several broken bones.
And others yet are pale and still,
Apparently from suffering free,
The surgeon cannot *hear*, but *see*.
See from the shock and blood and chill
These are beyond his kindly skill.
Men sawed asunder in a mill,
And soldiers shattered by a shell,
Legs crunched upon the glistening rail.
Builders dismembered by a fall,
Firemen crushed beneath a wall.
The maniac mother,—frenzied, wild,—
Who, laughing, carves her screaming child.
Skulls fractured in a drunken bout,
And suicides with brains blown out,
Or throats, deep gashed from ear to ear,
Through every season of the year,
In midnight shades, at noon, and dawn.
With scenes like these, of blood and tears,
Our honored guest has bravely borne,
Through half a century of years.

Then blithsome be the rest he seeks,
And in whatever land he roam,
May youth still blossom on his cheeks
For many happy years to come.

* * * * *

We've seen Ford Thompson by the bed
Of some poor patient, three parts dead,
With sinus deep and burrowing pus.
We've heard him make it clear to us,
That to prolong the patient's life,
He must apply the glittering knife.

"But, Doctor, if you cut it deep
Let me with ether go to sleep."
"Oh! no; it will be over quick,
And ether always makes you sick."
Thus having gained the man's permission,
The Doctor makes a deep incision,
On which—superfluous to tell—
The patient gives a mighty yell.

"That didn't hurt you; that's alright,
You'll have a splendid sleep tonight.
It didn't hurt you very much;
Brace up, then; just *one* other touch."

And then he grabs the same old sore,
And stabs it deeper than before.
The patient screams with oath or prayer,
The Doctor answers; "There now, there,
It's over now: You stood it well;
I know these things do hurt like h—;
But what you want is to get well."

"Now; don't you feel a great deal better?"
The patient answers, with a titter,
He really does believe he does.
And then the Doctor, e'er he goes,
With cheering smile and touch magnetic—
A real Thompsonian anesthetic—
In kindly, sympathetic mood,
Persuades the man his pain "felt good."

And then, in haste, he speeds away,
With nothing but a curt "Good-day,"
Or—to the patient's wish conforming,
Adds—"I'll be in tomorrow morning."
Said in a careless, flippant tone,
But Thompson never failed to come.

In our profession there are men—
We find them every now and then—
Who, having cured a sudden pain,
Finding their patient flushed with ease,
Deem it but right to swell their fees,
And wait until the sufferer's nurse
Can find his pocketbook or purse,
Before his thanks get "on the wane"
And he forgets his recent pain.
Was suffering patient ever pressed
In this way by our honor'd guest?

Most surely not. You all will say:
His errors were the other way.
With total disregard of self,
He gave no thought to gain, or wealth.
For pay, he made no scheme, no plan,
His fee: "Humanity to man."

* * * * *

What ever Fate for us may hold in store,
Or Destiny obtrude within our door,
The fleeting hour we revel in tonight,
Will, in the future, echo with delight.
We've honor'd one who disregarded fame,
And little cared to magnify his name.

But we, his friends, unbidden, in good faith,
Place on his brow tonight the " laurel wreath,"
With all good wishes : life, joy health, and rest.
These be the lot of our thrice worthy guest.
Through rolling years, on him our thoughts will dwell,
(For in all honest truth they surely can,)
As one who did his daily duty well
And kindly helped his suffering fellow-man.

These are the things we say of men when dead.
Does any law forbid their being said
Of those who live, who still can see and hear,
And duly prize their loving friends' good cheer?
It matters not. We'll stand by all we've said,
Honor to Thompson, whether live or dead.

In presenting the loving cup, Dr. King said : Fifty years ago, when Dr. Thompson received his medical degree, and at various times since then, when the rest of us received ours, the President of our Alma Mater said : " I confer upon you the degree of Doctor in Medicine, with all the rights, so with all the privileges, etc., pertaining to that degree; in testimony whereof, I present you a diploma," etc.

Now by the authority of the Committee of Arrangements, and through them of the ladies and gentlemen in this happy congress assembled, I confer upon Dr. Thompson the unlimited degree of our commendation and esteem, our congratulations and good wishes; as with all the rights, so with all the privileges and honors pertaining to that degree; in testimony whereof I ask him to accept from his medical friends this loving cup, which we now consign to his keeping.

Dr. Thompson said: Mr. Chairman and Members of the Medical Society: That I should be utterly incapable of doing justice to myself on this occasion is but natural when one considers the embarassment I must feel at the magnificent entertainment you have prepared to do me honor, and the flattering things that have been said of me this evening. If I could feel myself worthy of the laudations bestowed upon me by the several speakers I should indeed be the happiest man in the world. As it is, although with doubt as to my worthiness, I am tonight experiencing an exaltation of spirits and a sense of contentment worthy of the occasion and far beyond anything that I have here-

tofore felt. It has been my good fortune on two occasions to assist at entertainments similar to this, both of them in honor of men whose lifework had about ended, but which had been such as to call forth the most enthusiastic appreciation of their long devotion to duty and to humanity. The first time was when, many years ago, I went to Philadelphia to participate in honoring the late Professor Agnew, with whose career you are all familiar, and who did so much for the honor and progress of American Surgery. On that occasion I was carried away by my enthusiasm and admiration for the man who had for years been my ideal surgeon, and tried to picture to myself the sensations that he was experiencing at such a manifestation of the appreciation of his long professional life of honor and glory, without ever a thought occurring to me that a like honor would some day be paid to me by my professional friends and brethren, unworthy as I am, compared with the hero of that day. The other time was the tribute to Dr. Busey, well known to most of you, and whose memory is cherished by you all, for he did much to elevate the standard of medicine in the District of Columbia and was a physician of whom all of us were proud.

How much more gratifying it is to one to enjoy a celebration like this than to look forward to one of those symposiums we hold over a man after he is dead and buried. Two or three weeks ago, at the anniversary meeting of the Gynecological and Obstetrical Society, I was called upon to reply to a flattering toast, in the course of which I said that of late I had been engaged in endeavoring to find in literature, especially in poetry and philosophy, some compensation for the loss of youth, and something to justify the panegyrics that have been lavished on the beauties of old age ; that I had failed to find any that satisfied me ; and that I was finally convinced that there was none. But this evening, at least for the evening, I feel that there is some reason for me to modify my pessimistic views, for I am sure that not one of you had or ever will have occasion for more real happiness than I enjoy tonight. There is no age of man at which he becomes indifferent to praise, and I am inclined to think that the older he grows the more acute is his sense of appreciation, and this would seem to be natural, for he has little else left to interfere with the continued increase of an endowment that is common to all mankind, namely that of vanity ; and its gratification is the most consoling balm that can be applied to a suffering soul.

Whatever may be your feeling in the premises, I assure you that I would not exchange my sense of satisfaction and contentment tonight for those of the youngest member within the sound of my voice. When you shall have reached your fifty years of professional life, when you shall have enjoyed such a reception as I have received this evening, when you shall have had presented to you such a beautiful testimonial of love and regard as this loving-cup, then and not till then will you fully realize that life is worth the living and death possesses no terrors to him who is so honored.

At the meeting of the Medical Society, February 20, 1907, Dr. S. S. Adams moved that the Society give an entertainment in honor of Dr. J. Ford Thompson upon the attainment of his seventieth birthday and the fiftieth year of his professional life ; and that the President appoint a committee, the members of which should be selected to represent the institutions with which Dr. Thompson had been connected, to arrange the details of the entertainment.

The motion was unanimously carried, and the President appointed the following committee :

S. S. Adams, Chairman, and representing the Children's Hospital ;

G. W. Cook, Garfield Hospital ;

G. Lloyd Magruder, Emergency Hospital ;

T. C. Smith, the Medical Society ;

George M. Kober, Georgetown Medical School ;

A. F. A. King, George Washington University Medical College ;

J. Taber Johnson, Washington Obstetrical and Gynecological Society ;

W. F. R. Phillips, George Washington University Hospital ;

C. W. Richardson, Episcopal Eye and Ear Hospital ;

T. N. McLaughlin ;

Louis Mackall ;

J. D. Morgan.

List of Subscribers to the Dinner and Loving Cup.

Acker, Geo. N.
Adams, S. S.
Arnold, J. S.
Applegate, W. A.
Baker, Frank
Balloch, E. A.
Barker, H. H.
Barnes, N. P.
Barton, W. M.
Blake, Louisa M.
Boswell, A. W.
Bovée, J. Wesley
Boyd, G. W.
Boyd, J. C.
Bromwell, J. R.
Bryan, Jos. H.
Bulkley, J. W.
Butler, W. K.
Byrns, W. F.
Carr, W. P.
Chappell, J. W.
Claytor, T. A.

Cook, G. Wythe
Copeland, E. P.
Crook, Harrison
Cuthbert, M. F.
Deale, H. B.
Dixon, H. M.
Donnally, H. H.
Dunlop, John
Dye, Hobart S.
Evans, Warwick
Fletcher, Robert
Forwood, W. H.
Fowler, H. A.
Franzoni, C. W.
Friedrich, L. L.
Fremont-Smith, F.
French, Wm. B.
Fry, H. D.
Grasty, T. S. D.
Griffith, Monte
Hagner, F. R.
Hammett, Chas. W.
Hammond, T. V.
Heitmuller, Geo. H.
Hickling, D. Percy
Hodges, Jno. W.
Holden, R. T.
Hooe, A. Barnes
Hunt, P. C.
Hyatt, Franck
Jackson, V. B.
Johnson, J. Taber
Kerr, Jas.
Key, Sothoron
King, A. F. A.
Kober, Geo. M.
Lamb, D. S.
Lamb, R. S.
Lee, Thos. S.
Leech, D. Olin
Leech Frank
Lemon, H. T. A.
Luckett, L. Fleet
McKimmie, O. A. M.
McLaughlin, T. N.
Mackall, Louis
Magruder, G. Lloyd
Magruder, E. P.
Mallan, T. F.
Marshall, Collins
Miller, G. Brown
Miller, Wm. L.
Mitchell, Jas. F.
Moran, Jno. F.
Morgan, Edw. Lee
Morgan, Jas. Dudley
Motter, M. G.
Muncaster, O. M.
Muncaster, S. B.
Muncey, Elizabeth B.
Murray, T. Morris
Nordhoff-Jung, Sofie
Owen, W. O.
Parker, H. P.
Parsons, Mary
Phillips, W. F. R.
Pickford, E. F.
Pool, B. G.
Prentiss, D. W.
Reichelderfer, L. H.
Rand, C. F.
Reyburn, Robert
Rhett, H. J.
Richardson, C. W.
Richey, S. O.
Rixey, P. M.
Robbins, H. A.
Robins, Wm. L.
Roman, F. O.
Roy, P. S.

Ruffin, Sterling
Seibert, E. G.
Shands, A. R.
Shute, D. K.
Simpson, J. C.
Skinner, J. O.
Smith, T. C.
Sothoron, Elmer
Sowers, Z. T.
Sprigg, W. M.
Staples, A. H.
Stavely, A. L.
Sternberg, G. M.
Stone, Chas. G.
Stone, I. S.
Street, D. B.
Strickler, M. B.
Strobel, M. Louise
Tayler-Jones, Louise
Taylor, L. H.
Tiefenthaler, B. F.
Thomas, Ada R.
Thomas, J. D.
Thompson, H. C.
Thompson, J. Lawn
Thompson, M. F.
Thönssen, W. J. R.
Van Rensselaer, John
Vaughan, G. Tully
Walsh, J. E.
Watkins, E. W.
Wellington, J. R.
Wells, Walter A.
White, Chas. S.
White, Wm. A.
Wilkinson, W. W.
Wilson, Anne A.
Woodward, Wm. C.
Wyman, Walter
Yarrow, H. C.

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WASHINGTON MEDICAL ANNALS

THE EVOLUTION OF THE NAVAL MEDICAL SERVICE AND THE NAVAL MEDICAL SCHOOL.*

By JOHN C. WISE, Medical Director, U. S. Navy.

Inasmuch as the Naval Medical School is located in Washington, and as there must be some interests which it holds in common with this community, I have thought it might be interesting and probably profitable to lay before the Medical Society of the District the objects and status of this institution. Before doing this, however, I shall impose on your patience to speak briefly of the evolution of the Medical Service of the Navy, which has led up to the establishment of the Medical School.

To recall the names and pay tribute, however small, to the memory of those men who in our first and second wars with Great Britain unhesitatingly surrendered the comforts of home for a life at sea in time of war, aiding to secure the liberties so abounding today that we are apt to forget its cost; to recall these names is to me a grateful duty. Macaulay truly tells us, "that he who takes no pride in the achievements of his ancestors, will do nothing worthy the remembrance of his descendants," and I firmly believe, gentlemen, that this holds in matters of State and business as well as in those of blood and breeding. "The evolution of the military surgeon has been compared to that of his colleague in civil life (Hyde)—the operations of the latter began with the excursions of the barber, from the brass basin beneath the chin, and razor flying above it, while he who first succored in battle was the warrior who laid aside his spear and shield for the moment to devote himself to the needs of his fallen comrade."

The sons of Æsculapius were both warriors and physicians, and Caesar exempted from taxation such soldiers as were capable of dressing wounds which had not been sucked or otherwise cared

*Read before the Medical Society of the District of Columbia, February 27, 1907.

for by women. Paré and his colleagues attached to the Camp of Vendome confined their skill to the commanders, leaving the file to care for itself. Not until the world was given the example of the splendid Larrey, was it felt that all who fell in the field of battle were alike entitled to the services of the surgeon, and, to his imperishable honor and fame, we know that no engagement was so arduous or continued but that at its end he gathered the wounded of friend and foe alike, in evidence that his almost divine mission knew no enemy and that France was as great in her humanity as she was in her courage.

Just as naturally as all primitive tribes followed in migration the fertile valleys, it was upon the land that war was nurtured, and military establishments preceded those that were purely naval. In our own country, as early as May, 1775, the Congress of Massachusetts Bay ordered the organization of a medical staff and gave directions for their examination. We are told that six of sixteen applicants were excluded. In the following October, Congress ordered our first naval force, and allotted surgeons and surgeons' mates to each vessel, the pay of a surgeon being from $21.00 to $25.00 per month. In 1821, the surgeon's mate was succeeded by the assistant surgeon of our own time. In 1776, Congress resolved "That it be recommended to the legislatures of the United States to appoint gentlemen in their respective States, skillful in physic and surgery, to examine those who offer to serve as surgeons or surgeons' mates in the Army and Navy; and that no surgeon hereafter receive a commission, or warrant, in the Army or Navy, who shall not produce a certificate from some one of the examiners, so to be appointed, to prove that he is qualified to execute his office." Medical Director Bradley tells us these examinations were not held until 1777, and that the commissions and warrants were to hold good so long only as the vessel was afloat, or in commission. Joseph Harrison was the first surgeon in the Navy, serving on the *Alfred*, commissioned in 1775 at Philadelphia, and the first ship of war to fly our flag, which was hoisted by John Paul Jones, her First Lieutenant.

Ezra Green, M. D., first served in the Army, but in 1777 was commissioned surgeon of the sloop of war *Ranger*, Captain John Paul Jones commanding. Green was a graduate of Harvard, and had been in practice at Dover, N. H. He served on the *Ranger*, not only as surgeon, but as purser, and participated in the engage-

ments which made this ship and her commander forever famous, for she flew the flag in the harbor of Brest, when it was first honored by a foreign salute ; he participated in the action with the *Drake*, and when that vessel surrendered, cared for a large number of wounded. Green left a diary, which has been published, with an autobiography by Commodore Preble.

Another early medical officer, serving with John Paul Jones, was a young Virginian, Lawrence Brooke, who was brother to Edmund Brooke, who lived in Georgetown. Brooke served on the *Bonne Homme Richard*, and survived that desperate carnage, where one out of every two fell, and it is recorded that he drew the large sum in prize of $189.14. Surgeon Herman served on the *Enterprise*, in 1802, and volunteered with Decatur to cut out the *Philadelphia ;* it is in evidence, that he commanded a ketch, in that affair, and was commended by Decatur for his honorable share in the issue. Surgeons Ridgeley, Jonathan Cowdery and Nicholas Howard, serving in the war with the Barbary States, were captured and imprisoned. Dr. Ridgeley, after his release, resigned and practised in Annapolis; Dr. Cowdery in Norfolk, Va.

In the Library of the Naval Medical School, I find the diary of Dr. Evans, Surgeon of the *Constitution*, which won such great glory for our flag in 1812. It is recorded in this connection, that Lieutenant Reid was sent aboard the *Guerriére*, after her surrender, to offer medical assistance. Dacres responded, that he supposed the *Constitution* had business enough on board for all of her medical officers. "Oh, no," was the reply, "we had only 7 wounded, and they were dressed an hour ago." At that moment the *Guerriére* had below decks, 56 wounded, about 25 per cent. of her crew.

When Lawrence fell on the decks of the *Chesapeake*, he was carried below by Surgeon Richard C. Edgar and Surgeon's Mate John Dix. Dr. Usher Parsons, describing the scenes at Perry's great victory on the Lakes, tells us the wounded were brought below faster than they could be cared for, and that midshipmen Lamb and Pohig were both killed in the cockpit after their wounds had been dressed. It is known that Perry, under these circumstances, called down the hatch to his senior medical officer, asking for another man for his guns, and this was repeated until the surgeon alone was left to succor the wounded. Much the same thing occurred during the engagement at Manila, when the

fire of the American squadron converted the hospital of the *Reina Christina* into a veritable shamble. Admiral Montojo, in his official report, states that one-half of the *Reina's* crew were killed or wounded.

Experience has led me to conclude that of all men those who have hitherto followed the sea as a profession are the most tenacious in holding to preconceived opinion, and it is this which has made the fight for better air, better water and food, and dryer decks, so persistent; those who have been interested in this evolution can never forget the names of Lind, Trotter and Sir Gilbert Blane, in the English service, and those of Ruschenberger, Wilson, Gihon, Horner and others, in our own. James Lind, justly called the "Father of Naval Medicine," was physician to His Majesty's Royal Hospital, at Haslar, in 1772. He wrote of, and valiantly fought against, typhus, ague, yellow fever, catarrh, dysentery and smallpox, but principally against scurvy, the protean destroyer which left the Dutch East India Company but fifty of every hundred men alive sent from England to India. Thomas Trotter wrote his *Medicina Nautica* in 1797, and it is a complete history of the pests that devastated ships and turned homeward the impotent prows of many an expedition, fitly replying to Parkes' query, "Of what use are the sinews of war, if the sinews of men's arms are wanting?" His preface tells us, "The following pages contain the history of health, for three years, in a fleet that has performed the most brilliant service for Great Britain; which includes the splendid victory of the 1st of June; the masterly retreat of the 'little squadron,' under the Hon. Vice-Admiral Cornwallis, from a fleet four times as great in force; and the handsome capture of three sail of the line by Admiral Lord Bridport, in the very mouth of a French harbor." Sir Gilbert Blane was a pupil of Lind, and wrote his work on the diseases of seamen in 1803. His efforts in Lord Rodney's fleet, operating in the West Indies, reduced the terrible mortality and enabled it to keep the sea. In the preface to his work he says: "Having been appointed Physician to the Fleet, under Lord Rodney, in the beginning of the year 1780, I determined to avail myself, to the utmost of my abilities, of the advantages this field of observation afforded—to find out, if possible, the means of bettering the condition of a class of men who are the greatest safeguard of the State, but whose lot is hardship and disease

above that of all others—a fleet consisting seldom of less than twenty ships of the line, and often forty, which I attended in the different scenes of active service in that distant and unhealthy region."

In no branch of the world's progress has development been more manifest than the changed conditions under which men live on ship-board today, compared to those of half a century ago. This picture has been most graphically written by Gihon in his *Thirty Years Sanitary Progress in the Navy*. Years ago I read Smollet as a brilliant narrator of sea-yarns ; today I study him as a sanitarian, painting, as he did, the unutterable conditions from which men who follow the sea have been retrieved. He says in this connection—" we descended a locality which was as obscure as a dungeon. I had hardly penetrated the horrible place when I was seized with the odor of rotten cheese and rancid butter. In a square of six feet was the medicine-chest, and the chest of the head-nurse. When I saw the condition of the sick, I was astonished that any should recover. I saw there, men suspended in such manner, that each hammock had not more than 14 inches space (in width). Fresh air and light were entirely lacking and the atmosphere was repugnant with nauseous exhalations, which escaped from excrement and bodies of the sick. I saw vermin crawling, developed in the filth in which lived the sick."

The famous navigator Cook did much to ameliorate the discomfort of his men, but his surgeon, Reinhold Foster, had many pitiable tales to tell us, even speaking of the lower decks of the ships as death-traps, and of seeing men die solely of asphyxiation by impure air—all of which is corroborated by M. Rollin, the surgeon of *La Perouse*, who was a humane commander. With such an atmosphere to live in, with food invariably undergoing decomposition, and this scanty, with water collected from any convenient pond or marsh, can we wonder that typhus, dysentery, scurvy and catarrh, raged with frightful mortality, and to all these conditions was superadded an all-pervading dampness, which led Sir Ronald Martin to say with truth, that more men died from water within than that without the ship. Think of 1,521 cases of disease being disembarked at one time from the same fleet ! Do we wonder that the older writers spoke of a ship as the " most unnatural habitation of man ?" Gihon, in his work on Naval Hygiene, tells us that many of these conditions ob-

tained, just prior to our Civil War. When we reflect on such a past, and review the improved conditions of today, there can be found no comparison of greater advance in any department of human activity. Where the tallow-dip "spluttered on the dark deck, gasping for sufficient oxygen to support its feeble combustion," today the searchlight of electricity is turned into every angle and corner, or wherever microbic life can find a nidus. In ships built of steel we have no longer to contend with wood rotting in a bilge, which when pumped emitted water as black as ink, and putrescent beyond description. Water is no longer gathered here and there, full of organic waste, but is distilled on board. Owing to the facilities of today, men at sea get a liberal, sound and nutritious ration. The *cube d'emplacement*, though less for the individual than we would wish, thanks to the systems of exhaust and supply ventilation in our modern ships, the air can be frequently renewed, and kept dry, while the custom of keeping the berth-deck covered with linoleum, and to rarely employ methods of wet-cleansing, marks one of the most important sanitary triumphs in the Navy. And in contrast with the ravages of epidemic disease, which so swept the ships of the seventeenth and eighteenth centuries, that a French fleet returning from Louisburg in America, hardly had a force left sufficient to drop anchor in the harbor of Brest, what are the figures today? The ratio of sickness in the Navy for the year 1904 is 721.88 per 1,000, lower than for nine preceding years; (the ratio per 1,000 for the army in 1902 was 1,514, or more than double that of the naval ratio); thus it can be claimed for our fleets that from the most unnatural and unhealthy habitations of man, they can now be classed with the most healthful. Quite recently I have had the pleasure of inspecting the fine battleship *Maine*, lying at the New York Navy Yard. The quarters of the medical department are well forward on the berth-deck and consist of a dispensary, a comfortable hospital accommodating 25 patients, and a very complete, though small, operating room. The cots for the sick were models of convenience, well arranged from the standpoint of convenient cleansing. In the surgery, the operating-table and instrument-cabinet (metallic) were of the most modern design, and above all, there was such thorough attention to cleanliness and fresh air as an establishment on shore might have envied. The "sick-bay," as the hospital is termed on a man-of-

war, was covered with fine, hard and thick linoleum, and this covering I found thoughout the berth-deck, being informed that it was most satisfactory. Throughout the ship comfort, cleanliness and apparent contentment was most manifest, and I feel deeply gratified that these men-of-war's men had every attention, from the medical and surgical standpoint, which the circumstances justified.

Yet, gentlemen, I beg that you do not infer from this *couleur de rose* situation I have presented, that we of the Navy have not sanitary problems to confront; so much is this untrue I insist that sanitation is today the highest and most important service of the medical officer of the Navy. A most timely consideration of this subject is presented by Medical Director Simons, in the *Journal of the Association of Military Surgeons*, for December, 1906, "Some medical and sanitary questions met in every-day life, on a cruising ship of the Navy." This officer points out how much less the resisting power of the modern, intellectual mechanism that we call a sailor today is, compared to that of the old time men-of-war's men: "There is less of open life for the crew of the modern vessel than for that of the old type; the modern drill does not take the place, as a health-giving exercise, of the old sail drills, and men do not live in the open air as formerly. Modern requirements demand larger numbers in the engine, fire and dynamo rooms, offices, and other places below decks. These facts make it necessary that every means be taken to secure the cleanliness of the decks, and purity of the air which these men breathe while below. It must be seen to, that pantry shelves, provision and bag lockers, be movable, so that they can be cleansed and painted."

The wear and tear on the nervous system of our men-of-war complements are infinitely multiplied today, while the physical endurance is probably lessened. We are realizing that men must be robust to stand the new life, as well as the old, and that the best method to prevent disease is to bar physical derelicts; yet in our country today the demand for labor is so great that selection cannot be so rigid as desirable. We note, in this connection, that the ratio for tuberculosis is gradually increasing in the naval service. Epidemics of acute infectious disease have, within the last few years, appeared in our ships, introduced by recruits taken at the various rendezvous; the satisfactory manner in which such

epidemics are checked is a good demonstration of our present day condition to cope with such manifestations within very limited areas. In 1904, diseases of the respiratory tract and malarial fever were the most fruitful causes of disability.

If the sanitary and medical aspects of the naval service have been revolutionized, the features of military surgery, in marine warfare, have also undergone very marked change, due to the development of modern ordnance, the torpedo, the submarine and the mine. Despite all this, however, so far as I have been able to gather, the percentage of killed and wounded has fortunately not reached so high a figure as predicted : especially is this true when compared with some of the conflicts in our Revolutionary War and Nelson's campaigns. In the latter, the *Redoubtable* sustained the tremendous loss in killed and wounded of 500 men out of a complement of 600. The *Bonne Homme Richard* sustained a loss of 50 per cent., which was about that of her antagonist; in our late war with Spain, Admiral Montojo admits that when he ordered the transfer of his flag, the loss on the *Reina Christina*, was one-half her crew, and seven officers. For the entire fleet, the loss did not reach above 25 per cent. From all the sources which I have been able to consult, in the Russo-Japan War, the Japanese loss was not above 25 per cent. ; the Russian—not reported so far as I am aware—must have been great, even though the loss of life by drowning be excluded.

While in the older systems of warfare, and with short-range guns, actions began at close quarters, the opponents tending to close, thus giving rise to wounds from pistol, cutlass and grenades, today actions at sea are fought at much greater distance, owing to the accuracy and range of great-gun fire. The most mortal missiles now are splinters and shell fragments, hence the destruction of tissue is much greater than hitherto. Suzuki tells us that in the battle of the Sea of Japan the wound packages were altogether inadequate in size : another fruitful source of the destruction of life in modern naval warfare is the bursting of steam-pipes, inflicting scalds and burns of the most extensive character ; these conditions requiring an abundance of material and a numerous medical department.

Through the days of which I have spoken, and even during the Civil War, the need of the systematic instruction of officers for the Medical Corps of the Army and Navy had long been felt.

In addition to the immediate field of medicine and surgery, there is the broader, wider and far more important field of preventive medicine. To an audience such as this, composed of the highly intelligent in civil practice, it is hardly necessary to speak of what a small factor are wounds compared to disease in war. Many of you remember our Civil War, and some participated in it. All know the history in this connection of the war with Spain, while the record of Japan, in maintaining the health of her fighting force, and returning her sick and wounded to the front, has been a lesson, not unheeded ; and we can be assured, that in the future, the efforts to maintain the physical efficiency of a force afloat, or in the field, will be considered of equal importance, at least, to perfecting the chemistry of the explosive, or the type of firearm, which the normal muscle of the individual sailor, or soldier, alone can make effective. It is to promote this idea, the health of the enlisted force, to mitigate the inevitable ochletic troubles, which come in the life of the camp, and the ship, that makes the vocation of the medico-military officer a specialty, and the means of acquiring a proper knowledge of this subject, a necessity and such is the *raison d' être* of the Naval Medical School.

To strengthen the hands of the medical department of the Navy, and increase its functions, General Order, No. 16, dated March 1, 1906, provides among other things, that : The Bureau of Medicine and Surgery shall control all hospitals, and their force ; it shall have advising power with respect to all questions connected with hygiene and sanitation affecting the service, and to this end opportunity for unobstructed inspection—it shall provide for all physical examinations. The professional competency of all men for the Hospital Corps, and the opportunity to invite the attention of the department to any desirable change therein. It is to advise in regard to the sanitary features of ships under construction and in commission, regarding berthing, ventilation, quarters, and on shore the sanitary features in the construction and care of public buildings, especially barracks and camps. It shall have supervising control of water supplies used for drinking, cooking and bathing, and also the disposal of waste.

In the matter of the physical examination for enlistment, the inspection, ventilation, heating and disinfection of ships, the examination of all food consumed, both fresh and preserved—involving an acquaintance with animal pathology—the cooking

and serving of the ration, the study of meteorology and physics in relation to climate, and medical climatology, the best means of caring for the sick and wounded, ashore and afloat, in peace and war—all these subjects involve special training not incumbent usually on medical men, and to instruct in these and kindred matters, as well as those of medical administration and hospital corps work is the function of the Naval Medical School.

For many years the Navy had vainly endeavored to find some lodgment and start a course of instruction, so absolutely necessary to qualify the young graduate from civil life ; but this important matter was destined to fail of accomplishment, until 1893, when Surgeon-General Tryon established the "Department of Instruction," at the U. S. Naval Laboratory in New York. Much good work was done there, but the difficulty was that the growing need in the service for medical officers permitted but a small detail for study, and even the length of the time spent was but short and uncertain. Matters so continued until the Spanish War, after which it was found that in the then condition of the service, it was impossible to resume. In 1902, nearly ten years after the first effort, Surgeon-General Rixey took up this important matter, which resulted in the foundation upon which we are now working ; the labor of organization having been most ably carried out by Medical Director Robert A. Marmion, who was the first President of the School, serving a term of three years. The old Naval Observatory, long since abandoned for its original purpose, formed an ideal location, and with some remodelling the large buildings gave ample room for the various schools.

Within the past few months a model hospital has been constructed, so as happily to combine theory and practice. The present class numbers 28 student-officers—17 assistant surgeons and 11 acting assistant surgeons ; these are all commissioned officers being thus entitled by having successfully passed the Naval Medical Board, which holds its session in the building. Acting officers are those who do not show sufficient proficiency for the regular service, but whose acquirements and ability are such as to justify the hope that the course of six months will qualify them for the regular commission. The course commencing in October, concludes in April, and after a short interval, a second class is enrolled, consisting of passed assistant surgeons and surgeons, who have come from sea, and are given this opportunity for

familiarizing themselves with more recent advance in professional work.

Today the School stands on firm ground, its work is clearly defined, and the results better than the most sanguine originally hoped for.

Inevitably in the Army and Navy, the medical man, if he is to assimilate with the service he joins, must be something also of the soldier or the sailor. At the Naval School he is put immediately into the atmosphere and environment of the service, and he goes on board ship, in this respect certainly, a more finished product. Putting on his uniform immediately on entering the School, he disposes his plain clothes in a locker which is always ready for inspection, the idea being to inculcate that indispensable regard for system and cleanliness, of which he is to be the apostle and exponent on shipboard. The first hour of the day is spent in physical and hospital corps drills, the use of signals and meteorological instruments; besides the knowledge thus imparted, greatly enhancing the usefulness of an officer, we have found it to exercise the happiest results on his health and nutrition. The morning of every day, from 10.00 to 12.30, is spent in the chemical and bacteriological laboratory, alternately, while the afternoons are given to lectures and demonstrations. The "Duties of Medical Officers" is that branch which deals with administrative duties—an all important subject in organized services.

Naval Hygiene is a subject so vast that we wish the course could be double the length. Medical Director Dean, in writing of Netley in England and Parke's course in Hygiene, said its embrace was "sufficient to form a school of itself." Think of the bearing on preventive medicine, especially in ship-life, of selecting healthy men, their *cube d'emplacement*, the ventilation, heating, lighting, hygrometry and food; this course has been recently augmented by demonstrations at the Government laboratories, of healthy and diseased meats, a matter of vast moment, as the ration of today is largely of fresh provisions. The other courses found necessary to fit the graduate in civil medicine are: Ophthalmology, Toxicology, Tropical Medicine, Naval Surgery, more especially that of shell-wounds, treatment of the wounded in action, and x-ray work. A full course is given on the important subject of animal parasitology. Lectures are also delivered

on Medical Climatology, Quarantine, Immunity and Dental Emergencies, the Navy having no Dental Corps.

The laboratories, especially that for bacteriology, are very complete, and here is also conducted a great amount of clinical work for the naval service. Naval Hygiene, bacteriology (including pathology), and tropical medicine are the most important features of the School. The advance made in the study of diseases of hot climates marks one of the most progressive features of modern medicine, appealing especially to officers of the Government services, who are the pioneers in colonization.

Observe that behind the class of tropical diseases there is an element which no other possesses, that is the commercial side. The depredations of scurvy led the old Dutch surgeons, like Van Brugge, to discover and apply lemon juice in the service of Holland's East Indian trade. The great work of the Portuguese in their fight against paludism, in Africa, was to make the colonization of the dark continent more practicable and thus enable those early navigators to increase the area of their country's trade ; and so the American Commission to Havana, for the study of yellow fever, and the Uganda Commission sent to Africa by Great Britain to study sleeping-sickness, all have the commercial instinct as their main-spring, which has thus come to aid the more humane, yet less powerful, incentives to research. So great is the impetus in this matter that special schools for the study of tropical medicine have been established by the government of England, at Liverpool and London. France has established them at Marseilles, Bordeaux and Paris. These schools naturally seek the ports where, in the interests of commerce, ships are coming and going, and bring cases illustrative of Exotic-pathology from all climates. Paris has no commerce, but as all roads lead to Rome, and Paris is, in a very important sense, Rome today, it is said there is scarcely any form of ailment known to modern pathology, which is not found at the French Capital. Washington is lacking in this respect of medical teaching, and while we avail of the Government Asylum for a fine course in Psychiatry, and the Bureau of Animal Industry for instruction in meat inspection, we must rely upon Norfolk, where our large fleet in the West Indies sends its invalids, for clinical material illustrative of tropical maladies.

Before closing I wish to speak of another matter of great importance to the Naval Medical School, and that is, our inability

to fill the grades of assistant surgeon for the Navy to the limit allowed by present law.

The report of the Surgeon General of the Navy, 1904, shows that at the beginning of the calendar year there were 36 vacancies in the grade of assistant surgeon, counting the increase of 25 additional numbers, allowed by the act of 1903 for each year up to 1908 (7), and the deficiency has been greater or less for a number of years. The cause of this situation has been the basis of considerable speculation. Successive chiefs of the Bureau of Medicine and Surgery have attributed it to a lack of consideration on the part of Congress in the following connections, viz. : positive rank, the low rank accorded entrants, a lack of numbers, and finally, incommensurate pay. While these causes may have had their effect on some of those looking to enter the service, inasmuch as every one of these conditions has been remedied, and the vacancies still exist, we must search for other causes. It is true that the flow of promotion has just now become very slow, still this condition occurs in all such bodies, and is remedied from time to time by legislation. In the year 1904, of 99 persons granted permission to appear before the board of examiners, but 23 were accepted for the service—practically 23 per cent.—and it may be said that this is a higher ratio of accepted candidates than is usual.

The academic accomplishments required by the board for entering the naval medical corps are such as a high school graduate should possess, and it is claimed that the professional requirements are those which should be required of any properly qualified practitioner. It is probable that the candidates presenting are the average in qualifications, as nearly all the important schools of the country are represented, so that the conclusion seems to me inevitable that the acquirements of the average graduates in medicine, in the United States, are not such as they should be. On the score of academic requirements there is an almost unanimous consensus of opinion that men entering the pursuit of medicine today are lamentably deficient in this respect. Whatever be the cause, the fact remains that vacancies exist in the corps, and the Surgeon General has left no stone unturned in his effort to secure competent young men for a service so important to the nation, and any effort to lower the standards established, on the one hand, or the emolument or status, offered as inducements, on the other, would be attended by serious embarrassment.

The Naval Medical School has to acknowledge its indebtedness to the medical gentlemen of Washington for their interest, and generous assistance, many of whom have lectured before the class on subjects in which their knowledge is special.

As before stated, the work of the school, in its five years of existence, has been satisfactory; the young medical officer who goes out into the service today is much better rounded and equipped for his multifarious duties than was his predecessor; reports to this effect come to us from all corps in the service, and with gratifying notice from the representatives of foreign services who have visited the institution.

The key-note of work in the school is the effort to make the course eminently practical and that the habit of observation and research shall be fostered. Many thinking men in the profession today announce that in seeking to promote the scientific side of medicine, we are losing sight of the art; this is the undoubted trend of modern medicine. Young men are allured by the novel and the unknown. Many there are, who with a culture and microscope, act as if they were bent upon a voyage of discovery, and this often without chart or compass. The essentials are too much neglected.

While the spirit of research is the germ of progress, all of us were not born to be scientists, and it is to be feared that today the laboratory is alluring too many from the bedside. Of all men the physician should be of the broadest gauge school of philosophy, and yet, in instructing a class who have done well in medicine and surgery purely, it is not uncommon to find those who are unfamiliar with the laws governing the most important physical factors; who know nothing of physical geography, or the instruments used in meteorological work. Foundation work today should insist more on these branches of knowledge, and practical medicine cannot afford to ignore those conditions upon which man's well being primarily depends.

Dr. Kober said that the Society was under great obligations to Medical Director Wise for his interesting paper. He had pointed out very clearly the danger to sailors in the old days of dampness and overcrowding. Of course, a damp ship, like a damp house, operated to extract too much animal heat from those inhabiting it and therefore predisposed to diseases of the respiratory organs and catarrhal conditions in general. Also, the wooden construction and dampness tended to favor the retention of human exha-

lations upon the walls and other parts, and thus the air, already foul from overcrowding, was further contaminated. Happily these conditions have been removed by the era of steel construction and scientifically applied principles of air renewal. Ships, as habitations, then, have been very much improved.

As to the disparity in the ratio of sickness between the army and the navy, Dr. Kober believed that the remarkable purity of the ocean air is a factor to be considered. There is a vast difference between the army and navy in the prevalence of tuberculosis, to the advantage of the latter, which he thought indicates the preventive and curative qualities of sea air. Also, in army posts, while the habitations may be exceptionally good, sewage disposal is a problem not always easy to solve. For instance, the record of typhoid fever during the Spanish-American war was a disgrace in army annals, whereas the record in the navy was very good. The difference grew out of the fact that for the navy the ocean is the latrine and serves as an unvarying and ever present means for sewage disposal. He heartily endorsed all the statements made as to the vast progress gained in naval sanitation. He has watched with great interest the development of this specialized branch of hygiene, as also the gradually widening instruction of naval medical officers.

Dr. E. L. Morgan said that he was interested in the historical characters recalled by Dr. Wise. He wished to draw attention to the fact that there lies in an unmarked grave in the Congressional Cemetery, Dr. Bailey Washington, a naval medical officer, who served with distinction on the Boxer and who was given a medal of honor by Congress. Many other graves of distinguished men may be found there so unmarked.

Dr. Wise said he had been interested by Dr. Morgan's remarks about the grave of Dr. Bailey Washington. He would do what he could to secure the proper recognition of this last resting place of a deceased brother officer.

As to the relative prevalence of tuberculosis, spoken of by Dr. Kober, the navy has been found to enjoy little better immunity from this disease than the army. This question as pertaining to the navy has recently been the subject of careful inquiry and figures have been compiled which indicate that the prevalence of tuberculosis in the navy has increased 50 per cent. This is startling and seems to be due to the widespread prevalence of the disease in the nation. It means that many tuberculisable men are recruited who should never gain access to the service.

With respect to sanitary construction and equipment, he believed that the ships of the United States are better provided for in this respect than any others in the world.

THE CIRCULATORY SYSTEM IN GASTROINTESTINAL AUTOINTOXICATION.*

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I am well aware that the appellation, autointoxication is as often used to hide ignorance as to express knowledge, and the modern investigator cannot wonder at the tenacity with which the older physicians cling to biliousness, in view of the fact that modern research shows how closely the liver is associated with all that pertains to autointoxication.

There certainly today is a deep-seated belief among physicians that a variety of morbid phenomena are due to autointoxication; in other words, attributable to certain poisonous metabolic products. The division of intrinsic poisons into autointoxications and autoinfections does not yet have a practical place in clinical medicine. Poisonous foods taken into the body are certainly not autointoxicants, or poison from idiosyncrasy to certain foods any more than strychnia. They are clearly extrinsic poisons, but when wholesome food after entering the alimentary canal becomes poisonous, either from chemical or bacteriological change or both, with faulty vital cell-activity, there for all clinical purposes we have autointoxication. The practical question is, what means have we for making the diagnosis of gastrointestinal autointoxication? Let us first turn to the chemical basis, finding the absence of hydrochloric acid from the stomach a great bulwark against bacterial invasion of the stomach and intestines, and a preventive of poisonous chemical changes taking place in food; the presence of one or all of the acetone group in the excretions, with lowering of the alkalinity of the blood; the increase of ammonia and sulphides in the excretions; indican constantly in the urine; lessening of the amount and specific gravity of the urine. All these chemical changes point to autointoxication. Our clinical evidences are vomiting, diarrhoea and pain, gastric retention, the dyspeptic liver, of Bouchard, which is a temporary enlargement of the liver, due, says Magnus Levy, to antolysis with the formation of beta-oxybutyric acid. Man, says Bouchard, stands constantly on the brink of a precipice, the threshold of disease

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due to self-poisoning ; from this he is held back by the restraining influence of the gastric juice and digestive secretions, and by the constant effort of the eliminating organs. It is known that the liver stands in the way of the ingress of poisons and turns much noxious material back into the bowel for excretion, but if the matter is not excreted in the normal time and remains in the large bowel where there is a minimum of protective alimentary acid, it not only develops new virulence and toxicity, but is reabsorbed by the reversal of the normal osmotic current, which flows into the blood instead of the intestines, and osmotic change so carefully considered by the abdominal surgeons. Let me now call attention to the circulatory system and its value in diagnosis of autointoxication.

Paroxysmal Tachycardia.—This is an exaggeration of the physiological tachycardia of digestion, the autointoxication causing tachycardia is oftenest that which attends gastric retention. The attack comes on usually at night or in the early morning, with increased frequency of the pulse, 150 or more beats to the minute, great anxiety, cold sweat, cyanosis, increased energy of the systole ; the first sound acquires a vibratory timbre. The accentuation of the valvular sound is due to increased arterial tension. We find just this condition in gastric tetany, which I will mention later. The attacks are very dangerous, often resulting in death.

Bradycardia.—This is a normal condition in many women. A. Combe describes it in children suffering with gastrointestinal autointoxication, accompanying inanition. It is found in dilation, cancer and ulcer of the stomach, and jaundice, intestinal worms and constipation. In all these cases A. Combe believes we have autointoxication if other diseases are excluded. I have seen violent tachycardia from intestinal worms.

Arythmia.—This is a frequent accompaniment of alimenary toxemia ; the intermittence occurring at every third or fourth beat. It must not be mistaken for the irregular arythmia of organic disease, which is a much more serious condition. The arythmia is not brought on by exercise and the person is wholly unaware of its existence. It may be attended with either bradycardia or tachycardia. Certain foods cause arythmia. Sommerbrodt observed it twice in the same year in a patient after eating eel, and a number of cases are reported in overfed children.

Gastric Tetany.—Only two cases of gastric tetany have come

under my observation. Both had tachycardia with great anxiety to the point of mortal fear. Erb-Chvosteck and Trousseau signs were constant. In neither of my cases did death occur. Dr. Haliburton has found in gastric tetany with retention a very deadly ptomaine. In my cases retention did not exist. Gastric tetany can be easily mistaken for strychnia poisoning, but I think with care the physician can eliminate strychnia poisons, which is of great importance in treating the patient, and in criminal cases, to others.

Pseudo-Angina Pectoris.—Let me call your attention to the splendid article by Anders in the *Journal of the American Medical Association*, November 3, 1906, on this subject. The angina of gastrointestinal autointoxication must be distinguished from the true angina and the angina of lead and tobacco poison. The pain symptoms are much the same as of true angina. In true angina we look for sclerosis of the superficial arteries which will point to the changes in the coronary arteries; in true angina the aortic valve is oftenest involved, in the angina of intestinal toxemia the tricuspid insufficiency with greater cyanosis and the enlargement of the right side of the heart are the usual lesions. Also arterial hypertonia, the forerunner of arteriosclerosis.

Blood pressure is always increased in intestinal autointoxication, with spasm of the peripheral arterioles, which lowers the capillary blood pressure, and to the extent that the input into the veins is affected by the capillary spasm, the venous pressure is lowered. During the spasm of the arterioles the extremities are pale. When the gastrointestinal autointoxication is chronic the vasomotor spasm reaches the degree of dead fingers and Raynaud's disease. In all cases of senile gangrene intestinal autointoxication should be considered. Spasm of the arterioles with atheroma of the arteries plays an important part in causing the senile gangrene.

Angio-neurotic edema, of toxic origin, comes suddenly, usually involving only a part of the body, but I have seen one case, and many have been reported, where the whole body was involved. This condition may become chronic and only a urinary examination can distinguish it from albuminuria.

Sudden Death.—Many of the cases of sudden death ascribed to acute indigestion are undoubtedly cases where physiological digestion after a heavy meal has caused too severe a strain upon the

heart and bloodvessels, probably already diseased. But in other cases death, I doubt not, is due to gastrointestinal autointoxication —probably an exacerbation occurring in a chronic intestinal toxemia, which, by careful examination, might have been discovered before the acute attack. The chronic intestinal toxemia or the exacerbation is often due to food eaten a week before the attack. I had a case in a point about a month ago. I was called to see a child eight years old covered with a rash. No fever or sore throat. I asked the mother if the child had eaten canned salmon. She said once in his life, six days before. All food after that time until I saw him had been simple. Six days or more is the time given by Vaughan for intestinal toxins to form.

Acute Gastritis.—The cases recorded by the coroner as death due to acute gastritis occurring in the police stations of this city certainly have none of the clinical symptoms of gastritis, judging from the coroner's report. They seem clearly to be cases of autointoxication, the circulatory system being overcharged, in all probability, with oxybutyric acid or ammonia. In some of these cases death may have been due to acute cerebral edema, of toxic origin.

Arteriosclerosis.—From the autointoxication of diabetes, albuminuria and other autointoxicants. I have not yet carefully studied blood pressure, and indeed there is much new work for the investigator along this line. George Oliver is certainly one of the most brilliant writers on this subject, and I will use almost his words in what I have to say. Blood-pressure measurements have thrown more light on our clinical conception of diffused arterial sclerosis than any other disease. Often the temporal, radial, brachial and other accessible arteries may be decidedly thickened and yet the subject has lived to a good old age without signs of cardiac disease or apoplectic seizures. Then without the accessible arteries being diseased we have the accidents associated with arterial degeneration. Now the manometer differentiates between these two clinical groups. It shows that thickening of the accessible arteries does not raise the blood pressure very much, and that when we have a persistent and definite rise of blood pressure the terminal divisions of arterial systems, systemic and splanchnic, are involved. Again, if we find that this persistent high blood pressure yields to treatment, then we can be almost certain the splanchnic system is still in good condition, a most important point in prognosis. A dark

prognosis comes when all treatment fails to keep the blood pressure down. The patient has reached the last ditch, the splanchnic vessels have become involved.

Dr. J. D. Thomas said that an immense field was touched upon in the forepart of Dr. Roy's paper, viz.: the toxic agents concerned in the production of symptoms of defective metabolism. This field is much too large to be discussed in a general way, but the subject is most important, and one entirely too much overlooked. Of course metabolism is too involved and obscure for us to be sure of what is going on in the intestines, liver, etc.; but, however, enough work has been done in the various directions to show that manifestations of the metabolic errors are not always due to toxins, and that too much stress must not be put upon this feature of the problem. Still, autotoxaemia is at fault often enough to make it important to study.

The causation of tachycardia is obscure ; many cases are due to direct nervous impulses in true neuroses, although the objection may be raised that the neuroses may themselves be caused by toxemia. The close relation of the pneumogastric nerves to both the heart and stomach makes an interesting subject for speculation. He feels convinced that many cases of so-called acute indigestion with heart symptoms are not due to any toxin, but to direct irritation of food in the stomach upon terminals of the pneumogastric nerves, and by those nerves reflected to the heart ; the heart symptoms develop too soon after the ingestion of food for a toxin to be formed.

The rashes of gastrointestinal origin are interesting. He recalled the case of a child with a scarlatiniform rash and a sore throat ; he suspected scarlatina, but the absence of high temperature made him inquire as to the diet immediately preceding the attack ; he found that the child had eaten strawberries. After a brisk purgative, the rash quickly disappeared. The case belonged in the class of toxic rashes mentioned by Dr. Roy.

Dr. Nichols agreed that there remains much investigation yet to be undertaken in order to determine the character and to locate the place of the metabolic errors which give rise to the symptoms under discussion. There are very many stations in the metabolic cycle from which the offending agents may arise ; and, indeed, the fault may be prior to ingestion, for foods which are innocuous to the majority may be toxic to some. It requires study, therefore, to determine whether the noxious elements arise extrinsically or intrinsically. He knew of a man who was poisoned by butter ; a friend was always made ill by the ingestion of beef.

It is customary to lay much stress upon the alimentary canal as the seat of the trouble ; but treatment directed to this region at times proves futile. Many changes may take place in the food elements after absorption from which mischief may arise. Pep-

tone, for example, is not absorbed as such, but must be changed into albumin ; if absorbed as peptone, toxic symptoms will result.

Pernicious anemia, eczema, arteriosclerosis and other diseases due to metabolic faults cannot be treated by attacks upon the alimentary canal. The deleterious changes take place beyond the stomach and intestines.

He believes that cardiac symptoms are very much more apt to be caused by the centric action of toxins than by irritation of the pneumogastric terminals in the stomach.

Dr. S. S. Adams said that the question of whether the causes of gastrointestinal intoxication are extrinsic or intrinsic is not of such practical importance as the treatment.

Of the circulatory disturbances, none is of greater interest than angioneurotic edema. He had been called to see a child suffering with great pain in the kneejoint, with swelling ; after screaming all night with supposed articular rheumatism, the child presented at examination no fever, no redness of the skin over the joint, and no pain on motion ; but pressure over the joint elicited apparently agonizing pain. The diagnosis of angioneurotic edema was made. The pain and swelling skipped about from one joint to another, until the last parts invaded were the cheeks. There was no fever throughout, though the pulse was somewhat disturbed. The attack followed within twenty-four hours after the ingestion of some cheap candy.

The gastroenteric rashes are numerous and puzzling. Differential diagnosis may be extremely difficult. Careful history taking will usually trace the ingestion of some unaccustomed food.

As to acetonuria, his experience has been that it is not often present in just such cases in which it might be expected. He has repeatedly been disappointed in finding it both in cases at Children's Hospital and in private practice. With regard to autointoxication, it does not follow, to his mind, that, because symptoms persist after purgation, the toxins did not originate in the intestine. Time must be allowed for elimination by other channels. As a rule children are very promptly relieved by the administration of a brisk purgative and intestinal antiseptics. Relief is delayed in some cases, however, and in these he believes that the toxin persists in the circulation.

Edsall, of Philadelphia, is carefully investigating this subject, and his writings show that great progress is being made. He, himself, is much interested in the question, but he held to the opinion that whether the toxins of food-intoxication originate extrinsically or intrinsically, within the intestine or beyond it, in children, at least, a large dose of castor oil will usually effect a cure.

Dr. Ralph Walsh recounted a case which was called to mind by Dr. Roy's paper. About twenty years ago he had been called to a hotel to see a "dead man." He went to the room indicated

and saw stretched on the bed a man apparently dead ; closer examination showed that he was pallid, pulseless, but breathing. He sat down by the man and placed his finger over the radial artery, and after waiting a few minutes, a wave of blood passed under his finger, color returned to the patient's face and he opened his eyes, inquired who the doctor was, and declared that nothing was the matter, that he was accustomed to such attacks. While making these remarks, he went into the apparently lifeless state again ; after the lapse of a few moments, again the wave of pulse recurred and with it consciousness. The patient then insisted that the doctor's presence was unnecessary, that he had taken some citrate of magnesia and that as soon as it acted he would be himself again. The doctor was afraid to leave him, but the brother of the man came in and gave assurance that the attacks were not unusual. After a few hours the doctor returned, found that the citrate of magnesia had acted, and that the patient was sitting by the window reading the evening paper.

Dr. Roy said that he had endeavored to make it clear in his paper that food poisoning is not autointoxication, but must be regarded in the same class with chemical poisons. His remarks had been addressed to those symptoms which appear many hours after the ingestion of food, when toxins have had time to be elaborated within the intestine.

CASE OF POSTERIOR BURSA OF KNEE.*

By GEO. TULLY VAUGHAN, M. D.,

Washington, D. C.

The specimen was a bursa dissected from the postero-internal surface of the kneejoint.

The patient was a woman, age 45, who for several years had had a swelling in the popliteal space. There was not much pain, and at first the swelling would now and then increase and then subside ; finally no subsidence was observed and the swelling progressively increased. She consulted several physicians who made different diagnoses, none of which was correct. Strange to say, the diagnosis, popliteal aneurism, was not made. Dr. Vaughan came to no positive conclusion as to the disease, though he thought that it was an enlarged bursa, as it proved to be. He easily dissected it out ; it was attached to the inner side of the internal attachment of the gastrocnemius muscle. The patient recovered.

* Reported, with specimen, to the Medical Society, February 20, 1907.

Dr. D. S. Lamb said that a bursa may often be found under the semimembranosus tendon, but it is not constant. He believed that this bursa must have originally communicated with the synovial sac of the joint, which would explain its variability in size. Probably the communication was cut off by inflammation, and the swelling then no longer diminished. This was the first case of inflammation he had seen affecting this particular bursa.

Dr. Vaughan said that there are normally twelve bursae around the knee joint ; any one of them may become inflamed and enlarged by the inflammatory effusion. There are several internal bursae, about both the semitendinosus and the semimembranosus tendons, and upon the internal lateral ligament. The literature upon the subject is scant, and few cases have been reported involving bursae upon the inner side of the knee. He had no doubt that there was an original communication with the synovial sac, subsequently cut off by inflammation ; but its location could not be found upon careful inspection.

CASE OF SUPPURATIVE APPENDICITIS IN A SCROTAL HERNIA.*

BY GEO. TULLY VAUGHAN, M. D.,

Washington, D. C.

The patient was a man, 35 years of age, who eight months ago acquired a right scrotal hernia, which at first was reducible. The hernia descended at intervals, giving rise to pain. About three weeks before his admission to Emergency Hospital the hernia descended and became irreducible ; on a date, impossible accurately to determine, he had a chill, vomited, and the hernia became very painful.

Examination disclosed a swelling in the right scrotum the size of a lemon, hard and tumor-like. As he had some fever, Dr. Vaughan decided to operate at once. The mass was found to be a hernial sac, containing a perforated appendix surrounded by an abscess. The appendix represented four types ; it was obliterated, hypertrophied, perforated and gangrenous. The abscess was beautifully separated from the abdominal cavity by adhesions in the inguinal canal. Accordingly, an incision was made above

*Reported, with specimen, to the Medical Society, February 20, 1907.

the abscess, the appendix was amputated and the caecal opening closed. The patient recovered.

Although the appendix is frequently found in a hernial sac, it is rare to find appendicitis so situated. Nine years ago Dr. Vaughan had seen a similar case; in a hernia of two years duration was found an appendix inflamed and enormously hypertrophied. He referred to another case of appendicitis in an inguinal hernia on the left side.

Dr. E. P. Magruder said that he had been interested in this case, as he had seen the patient both before and after operation, and he had gone over the literature upon the subject. Appendical hernia may occur through the inguinal or the femoral ring, through the obturator foramen, at the umbilicus, or it may be retrocolic or mesenteric. The first case of the kind was reported by Morgagni. Appendical hernia may be congenital or acquired. Two congenital cases have been reported: one died of strangulation after treatment by bandage and pad; at the autopsy, the appendix and lower end of the caecum were found in the sac; the other case was umbilical.

Acquired cases may be due to preformed adhesions. Virchow and others have referred to acute and chronic adhesions in fetal life, which may cause various visceral displacements, including hernia.

The interest in this case centers in the complicating appendicitis. At the Boston City Hospital four appendical herniae were found in over 3,000 autopsies; in none of these was the appendix inflamed. The diagnosis is important and difficult; hernia containing appendicitis is apt to be taken for strangulated hernia and *vice versa*. Coley, of New York, has twice made the diagnosis.

CASE OF HYDATIDIFORM MOLE.*

By J. D. BRADFIELD, M. D.,

Washington, D. C.

The specimen was an oval mass three by two inches in dimensions, consisting of cystic chorion villi imbedded in bloodclot, most of which seemed to have organized. Removed from the uterus of a patient about 35 years old, married about 12 years, with one child 10 years old; she had had one miscarriage. Last menses in February, 1906. Specimen removed by Dr. Bradfield Nov. 26, 1906.

*Reported, with specimen, to the Medical Society, March 13, 1907.

Dr. I. S. Stone said that the typical appearance of this peculiar anomaly was obscured in the specimen; it was not at all like the grape-like masses we expect in this condition. The important factor in this special degeneration is the danger of subsequent chorio-epithelioma; the imperative duty after the passage of such a mole is to curette thoroughly, to examine the scrapings histologically, and if the slightest suspicion remains that any placental tissue has been left behind, to curette again. There has been very little reference to this interesting condition—chorio-epithelioma—in this Society; nearly 200 cases may be found in the literature in which this neoplasm has been discovered at curettement. The possibility of malignant change is the most important feature in connection with hydatidiform moles.

Dr. J. P. Miller said that the specimen was most interesting to him. In 1878 he had seen such a case; he was the fourth physician who had undertaken the care of the patient, and he had been called to treat her for consumption. He had found her in a very bad condition, with fever and impalpable pulse; she looked as if she were pregnant. Hemorrhage from the uterus induced him to curette, and he removed from the uterine cavity large masses which looked exactly like bunches of white grapes. The patient was very slow in recovering, but afterwards bore several healthy children. He had looked up the literature and found that hydatidiform mole occurred only once in 40,000 pregnancies. The specimen was of interest to him on account of his own puzzling case and on account of the rarity of the condition.

Dr. A. F. A. King said that the most important consideration with regard to hydatidiform mole is the necessity of closely watching the woman who has passed it, for a number of months, to guard against the occurrence of chorio-epithelioma. This is a most malignant disease; and only recently has the dangerous character of hydatidiform degeneration been generally recognized, though the fact had been pointed out years ago. If the slightest fragments of chorional tissue be left in the uterus the disease will develop. He pointed out the tendency of syncytial neoplasms to start up wide-spread metastasis and urged immediate and radical hysterectomy in every case in which chorio-epithelioma has been recognized.

Dr. Reyburn said that years ago he had been called to a patient who was thought to be having a miscarriage; instead of expelling a fetus, however, she passed a hydatidiform mole. She had been given no special after-treatment, but recovered and later had children.

Dr. Heiberger reported a case of placenta previa in which after very copious bleeding a four pound child was successfully delivered. The placenta had undergone partial hydatidiform degeneration. The child survived only a few days.

CASE OF ANEURISM OF ARCH OF AORTA AND TUBERCULOSIS OF HEART.*

By J. D. THOMAS, M. D.,

Washington, D. C.

E. H., colored, waiter, age 33, married, one living child, two dead; his wife had one miscarriage and one child was born with a cutaneous eruption. He had syphilis ten years ago and six years ago suffered from an eruption; five years ago a fractured leg was set under an anesthetic. Otherwise he had been healthy up to date of history, November, 1905, when he was seen in the Chest Clinic at Emergency Hospital.

In the spring of 1904 he first noticed severe pain between the scapulae; afterwards intense pain was felt in the front of the chest. In June of that year, after sudden exertion, he suddenly became hoarse and his voice has not improved since; the hoarseness was very noticeable at the time of examination. The pupils were normal; there was no tracheal tug. Left radial and brachial pulse smaller and feebler than right. He swallows large boluses of food without pain or difficulty, but frequently vomits; the vomiting is marked at times by pain at the level of the second costal cartilages. No symptoms of pressure upon trachea or bronchi. Apex beat of heart barely perceptible. A slight pulsation was visible in the second interspace, two inches to the left of sternum. Percussion dulness extended from about the lower border of the left first rib, three inches to the left of the sternum, downward and curving outward to merge with the cardiac dulness; dulness was also found one-half inch to the right of the sternum as high as the second interspace. Systolic rumbling sound was heard over the pulsating area; no bruit. Examination of vocal cords made by Dr. Mullins, November 1st and 15th, 1905, revealed marked abductor paralysis of left vocal cord. Fluoroscopic examination and skiagraph showed a mediastinal mass agreeing in outline with the dulness found on percussion.

The patient was treated in the dispensary for awhile without much improvement; he was given potassium iodid. Later he was sent to the Georgetown Hospital where he was kept in bed for a month or six weeks, with great improvement. The pain

*Reported, with specimen, to the Medical Society, March 6, 1907.

became less, the dysphagia disappeared, and the dyspnoea was relieved. He insisted upon leaving the hospital and disappeared from observation.

Dr. D. S. Lamb stated that the patient was admitted to Freedmen's Hospital, November 22, 1906. He gave some additional information. His father died suddenly but from what cause was not known. His mother was rheumatic and asthmatic. Two brothers and two sisters were living and well ; one brother died in infancy. He had used both tobacco and alcoholics until compelled to stop ; had had gonorrhoea and buboes ; had had almost all the diseases of childhood. His last illness began in August, 1905 ; after exertion he suddenly felt weak and had pain around the left shoulder and arms extending to the heart ; a feeling of "fullness" in the chest ; difficulty of swallowing and hacking cough. He began to spit blood and this continued for over a year. In November, 1905, he had nightsweats. In November, 1906, he had frequent hemorrhages from the lungs of red frothy blood ; lost appetite ; bowels became irregular ; had dyspnoea ; fever when the cough was severe. When admitted to Freedmen's Hospital his skin was dry ; eyes dull ; there was a circular depression above the ensiform cartilage ; tenderness on percussion over the left subclavian region ; heart beat frequent, second sound absent ; bruit in cardiac area ; sibilant rales over lungs. Dulness on percussion over abdomen ; many areas of extreme tenderness ; spleen and gallbladder seemed enlarged. His weight had fallen from 225 to about 150 pounds. Urine diminished in quantity, of reddish color, and thick in the mornings. Nov. 29 his blood pressure was 95 on each side. Died Dec. 9. His temperature was above normal most of the time, 99 to 101.6; for a few days it was normal or just under normal. His pulse was almost continuously above normal. Respirations 26 to 28 and a few times 30.

Dr. Lamb made the post mortem examination. The arch of the aorta was of normal caliber but sclerotic, and on the floor of the transverse portion was a hole half an inch in diameter, leading into a large pouch, nearly filled with laminated clot ; the sac had ruptured into the left bronchus, causing sudden death from hemorrhage. The lung was much compressed by the sac and generally adherent by old firm adhesions, and in the substance were a few tuberculous masses. The right auricle of the heart

showed an irregular mass projecting into the cavity; this on microscopic examination proved to be tubercular. The pericardium was everywhere adherent and generally much thickened. The stomach was found to contain blood and mucus; other abdominal and pelvic organs normal.

Dr. S. S. Adams said that he had an indistinct recollection of Dr. Thomas' case while the patient was an inmate at the Georgetown Hospital. Dr. Thomas deserved much credit for making the diagnosis in view of the absence of aneurismal bruit and other classic signs.

Dr. J. D. Morgan said that he could testify to Dr. Thomas' acuity in detecting thoracic aneurism. He himself had found Oliver's sign present and valuable in a number of cases. He had also frequently been aided in diagnosis by the pressure paralysis of the recurrent laryngeal nerve.

Dr. D. S. Lamb said that the position of the aneurismal mass in Dr. Thomas' case was precisely such that compression of the recurrent laryngeal nerve and paralysis of the left vocal cord would result.

Dr. Thomas said that the specimen demonstrated, by the hard clot contained in the sac, what may be accomplished by absolute rest; if this patient could have been persuaded to remain at rest for a long period, with the sacculated variety of aneurism present, his life might have been greatly prolonged. The appearance of the specimen brought to Dr. Thomas' mind a specimen removed from another patient, in which the sac contained a very hard laminated clot which had been produced by rest; in this case, the aneurism had eroded the bodies of two vertebrae and part of the sternum.

In the specimen under discussion, the location of the aortic rupture at the site of the recurrent laryngeal nerve explained the history of the sudden development of paralysis of the left vocal cord.

The Physician's Obligations.—The physician who appreciates his obligations must not be satisfied with simply treating disease; he must so treat his patients that he may command their confidence and respect, and that he may have the confidence and respect of the community in which he lives. But, most important of all, he must so conduct himself that he will have the confidence and respect of his fellows in the profession. All these things spell "Success" with a capital S.—*Jr. A. M. A.*

CASE OF GANGRENE OF THE APPENDIX WITH DIPHTHERITIC ILEOCOLITIS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

The subject was a colored woman age 28, a cook. Her parents are said to have died of senile debility ; she had one brother living and in good health. She had had the usual diseases of childhood ; at 17 years had pneumonia, afterwards had nervous headaches. Her last illness began about Feb. 1, 1907, with nausea and vomiting ; she had a chill and fever every other day for two weeks ; severe pain in what as she described it was the lower axillary region, in breathing ; her appetite poor ; bowels regular. She took to her bed on the 17th and was admitted to hospital the 20th. Her temperature was 97–98 ; pulse 110–120 ; respiration 26 ; tongue coated at edges ; skin dry and hot ; unable to lie on left side ; face drawn ; pain and tenderness over abdomen ; and tympanites. Nearly all the night after admission she vomited ; the temperature 98.2 ; pulse 118 ; respiration 36. She died during the day, the 21st.

The *post mortem* examination showed a well nourished body. Except for general old pleuritic adhesions on both sides the organs of the chest were normal. In the abdomen there were general old peritoneal adhesions, and a general recent suppurative peritonitis with recent adhesions, lymph and purulent fluid ; no fecal odor. The cause of the peritonitis was a perforation of the appendix, which was much thickened, ulcerated and contained several fecal concretions. The ileum and colon as far along as examined showed thickening and redness of the mucosa and a thick false membrane covering the mucous surface.

Dr. Chappell asked what organism was responsible for the exudate in the cecum ?

Dr. Lamb replied that the autopsy was done under circumstances which made it impossible to take cultures.

*Reported, with specimen, to the Medical Society, March 6, 1907.

CASE OF SARCOMA OF THE KNEE.*

By JAS. F. MITCHELL, M. D.,

Washington, D. C.

The patient was a woman, age 22, treated at Providence Hospital. She had had a fracture of the lower extremity of the femur two years ago; was able to walk six weeks after the injury, but the swelling in the region of the knee never disappeared, and the fracture recurred three times.

In Chicago a surgeon removed a specimen from the mass at the knee and it was reported to be a giant-cell sarcoma. When she entered Providence Hospital the operative possibilities were carefully considered. As it has been clearly demonstrated that giant-cell sarcoma is a mild type of this disease, curettage or resection of the knee was at first contemplated. [In this connection, Dr. Mitchell exhibited a skiagraph of a sarcoma of the tibia which had been cured by curettage alone.] The disease was so extensive, however, that resection would have resulted in a useless short leg, and amputation was therefore decided upon. Dr. Carroll had examined the specimen and confirmed the diagnosis made in Chicago.

Dr. Shands wished to report a similar case he had seen at the University of Vermont, in which he had made an erroneous diagnosis. This was a girl of 16 who had had a swelling of the knee-joint for some time; fluctuation was very distinct and he therefore advised arthrectomy, thinking he was dealing with a tuberculous arthritis. When the incision was made, instead of the expected outflow of pus, he found that the entire joint was broken down and contained a jelly-like mass, resembling caviar. The disease proved to be giant-cell sarcoma. This condition must be rare, as Dr. Mitchell's case was only the second case of the kind Dr. Shands had seen in an extensive experience during fifteen years. A third case was diagnosed as tuberculous arthritis at the Hospital for Ruptured and Crippled in New York.

Dr. D. S. Lamb said that one feature of the specimen had not been mentioned. Dr. Vaughan had recently presented a specimen of diseased *bursa* at the back of the knee; in Dr. Mitchell's specimen may be found two flat, calcareous, inflamed prefemoral bursae. The condition was interesting enough to be given some attention.

*Reported, with specimen, to the Medical Society, February 27, 1907.

Dr. Mitchell, referring to Dr. Shands' experience, recalled a case of sarcoma of the knee, which had been treated for months as a gonorrheal joint. The knee had been kept in a cast. The differential diagnosis is very difficult to make without the x-ray examination and histological study of a specimen of the tumor.

CASE OF CARCINOMA OF THE RECTUM.*

By JAS. F. MITCHELL, M. D.,

Washington, D. C.

The patient was a woman, age 20, married in March and miscarried in May, 1906. In June she began to suffer with abdominal pains; the stools became ribbon-like, the abdomen distended. To relieve her symptoms, she required daily rectal flushings, with the tube passed through a narrow stricture. Dr. H. M. Dixon referred her to Dr. Mitchell in November; upon examination, a nodular growth was found encircling and encroaching upon the rectum, one finger's length from the anus; the growth formed an annular stricture with an opening one cm. in diameter. The diagnosis lay between syphilis and carcinoma. As no history of syphilis could be obtained, he and Dr. G. Brown Miller performed an abdominal exploration; the mass was found to be freely movable, there was apparently no metastatic involvement, and the condition appearing operable, an inguinal colostomy was done. Later the rectum was removed by Kraske's method, the glands in the sacral hollow excised, and the severed bowel united by end to end anastomosis. Drainage was effected through the anus. The intestinal sutures held very well, except in one place which afterwards healed without trouble. The colostomy wound also healed and the patient made a good recovery. The nature of the gross specimen was difficult to determine, but under the microscope Dr. Carroll found it to be carcinomatous. He thought it might be interesting to add that in a recent number of the *Annals of Surgery*, the statement was made that the most frequent site of carcinoma in the young is the rectum.

Dr. G. Brown Miller said that the case was most interesting from several points of view. First, there was no ulceration of

*Reported, with specimen, to the Medical Society, February 27, 1907.

the mucous membrane, which is usually present in carcinoma. Second, the thickening of the intestinal wall was very symmetrical; upon section there appeared to be an inner layer of normal mucous membrane, then a middle coat of semi-translucent material, apparently a greatly hypertrophied middle coat of the bowel, and outside, a layer of connective tissue. Third, in only one point did there appear to be any invasion of the connective tissue layer; this invasion was recognized under the microscope. One gland showed some carcinomatous change.

Dr. D. S. Lamb said that he was much interested in Dr. Miller's remarks upon the appearance of the fresh specimen. In its present state, the specimen looked distinctly syphilitic; moreover upon close examination there may be seen the distinct scar of a healed linear ulcer. Here was a young woman, only 20 years of age—surely there must be very few cases of carcinoma at that age. Might there not have been after all a syphilitic history? Was she put on antisyphilitic treatment?

Dr. Fremont-Smith said that the most interesting feature of the case was the question of differential diagnosis. He recalled the case of a gentleman who had had a growth in about the same region of the rectum; the rectum had been removed by two eminent New York surgeons, two months prior to Dr. Smith's introduction to the situation. The patient was to be sent South under Dr. Fremont-Smith's care. Healing had not been complete at the site of anastomosis and a consultation was held between himself, the two surgeons and the patient's family physician, who had not been previously consulted. After the inspection of the wound, the family physician remarked: "Gentlemen, I congratulate you upon your skillful extirpation of this syphilitic growth; had I been consulted prior to the operation, I could have given you this patient's syphilitic history." The patient was put on potassium iodid at once, the ulcer healed immediately, and there was no recurrence of the growth.

Dr. H. M. Dixon said the question of syphilis had been considered, but no history of it could be elicited after the most careful inquiry. At no time had this patient had any hemorrhage. Since the operation she had been put on potassium iodid and had greatly improved in general health.

Dr. Mitchell said that he had had many misgivings after seeing the character of the mass. From every point of view, the condition before the proctectomy appeared to be malignant, but the gross specimen had every character of a syphilitic growth. He had therefore been greatly relieved when Dr. Carroll reported the mass to be schirrous epithelioma.

A PARTIAL REVIEW OF LARYNGOLOGY.*

By A. B. BENNETT, M. D.,

Washington, D. C.

When first I was informed that I was to review so great a subject as Laryngology it seemed to me that, inasmuch as the greatest strides this specialty has taken have occurred in the past twenty or thirty years, and as we have in our midst men who have been practicing this specialty during that period of progress, one of them could best cope with such a subject, and I trust they will add from the abundance of their experience points that I may omit in this brief paper.

In the years just prior to Garcia's gift to Laryngology[1], there stand two prominent workers in this field, namely, Trousseau of Paris and Horace Green of New York ; and a brief sketch of their beliefs, teachings and methods will show by comparison that the advance of this branch of medical science is as gratifying as in the other branches. Trousseau popularized the operation of tracheotomy for membranous croup and insisted that it be performed early, using a strong solution of silver nitrate on the edges of the tracheal wound. He taught that tuberculosis and syphilis were the exclusive causes of aphonia and dysphonia, for which his treatment was the application of solid silver nitrate to the pharynx, or a strong solution of the same drug injected back of the epiglottis through a curved silver tube perforated at the end. Of course he could only illuminate the oropharynx, and many attempts were made to invent a laryngoscope. After failing in the use of several laryngoscopic instruments, Trousseau stated that he believed the epiglottis formed an insuperable barrier to a view of the inner larynx.

Horace Green, the pioneer of American laryngology, as early as 1838 commenced to interest himself in local applications to the pharynx and larynx, and he made a probang with which he became very expert in reaching the larynx. In 1846 Dr. Green in his treatise on bronchitis, strongly advocated topical applications of silver nitrate solution to the larynx and the introduction of the same remedy into the trachea and bronchial tubes by means of a catheter. He maintained that he was the first to pass a sponge

*Read before the Medical Society, March 20, 1907.

probang loaded with a strong solution of silver nitrate below the epiglottis, through the larynx and down into the trachea, thus reaching the diseased parts with more certainty. He applied silver nitrate to follicular disease, croup, spasmodic asthma, laryngitis, chronic bronchitis and other respiratory diseases. He reported 106 cases of tuberculosis and chronic bronchitis treated successfully by catheterization. In 1859 he wrote a work on "Polypi of the Larynx and Oedema of the Glottis," telling of the presence and need of removal of polypi and of scarification for oedema of the glottis. So much was he discredited by his colleagues that a committee of the Medical and Surgical Society of New York, of which he was a member, condemned his practice, and a resolution was offered asking him to withdraw from the society. Trousseau denied the possibility of Dr. Green's operations. It is a great satisfaction to know that Dr. Horace Green lived to see the best men abroad and in this country candidly admit that he had done as he reported that he had.

In Elsberg's bibliography[2] of published articles from 1809 to 1878, during the first 20 years there were 65 publications relating to the throat, of which 31 were on croup, 7 on tonsils, 6 on foreign bodies, 3 on the palate, 2 on the uvula, 2 on mouth disease, and one each on whooping cough, tumor, nose polypus and aphonia. During the next 29 years there were 513 papers, and in the next 20 years 1,583 articles relating to laryngology in its broadest sense were published. Since that time the ratio of increase has been even greater, for at the Surgeon General's Library the index contains 11 pages on adenoids and 8 pages on accessory sinus disease.

Today there is no better indication of the deplorably uncertain state the therapeutics of laryngeal tuberculosis is in than the many methods advised for its treatment. It is so seldom that a favorable case for purely local treatment presents itself, so many times a far more serious and progressive pulmonary involvement being present. Surgical and radical measures in the treatment of laryngeal tuberculosis have given no better if as good results as the milder and gentler methods. Twenty-five years ago Moritz Schmidt[3] advocated tracheotomy so that the larynx would have absolute rest. This method has few supporters, although laryngofissure has been again urged by Hansberg, especially when there is great difficulty in reaching the larynx through the mouth and when the lung involvement is not serious. The operation is

performed under cocaine, taking two stages, there being an interval of eight days between a high tracheotomy and the laryngotomy. A very painful and severe treatment is advocated by Bourack and urged by Krause. This is curetting, rubbing over the curetted surface with lactic acid crystals and followed by inhalations of mentholized oil. The objections to this are the difficulty of performing a careful curetting, the extreme after pain and the tendency for the cicatrices to break down. Monnier recommends painting the affected part with glycerinated extract of cod liver, citing thirteen cases, all of which were relieved and many cured. Other local applications deserving of mention are formalin in solution or as paraform and iodoform. Phototherapy is playing an important rôle in the treatment of tuberculosis of the larynx. The effect of the sun's rays reflected by a laryngoscopic mirror on to the larynx itself has had very beneficial effects in infiltrations and congestions, oedema being regarded as a contraindication. The effect of the various light rays applied externally to the larynx seems to be beneficial and is worthy of consideration. Probably the most important measure after all is the treatment of the individual first and then the local disease.

In regard to malignant disease of the larynx the hopelessness of the situation has been in a great measure replaced with the assurance that more can be done for the patient than shortening his life of suffering by an operation.

Delevan[4] mentions three possible methods of attacking malignant diseases of the larynx.

I. Thyrotomy where the growth is entirely endolaryngeal and in its incipiency.

II. Partial Laryngectomy in cases where considerable of the inner surface of the laryngeal cartilage is involved with no lymphatic involvement.

III. And complete Laryngectomy where there is great involvement of the larynx and lymphatic extension.

Lincoln[5] reported seven cases of cancer of the larynx operated upon by laryngectomy, followed in each case by relief from pain, dyspnoea and cough. In most of these cases there was gain in weight and markedly increased comfort, one of the cases living for many years after the operation. He mentioned the danger of cessation of respiration from reflex inhibition by irritation of the superior laryngeal nerves, which could be avoided to

a great extent by injecting them with cocaine before cutting. One of his cases died two weeks after the operation from inflammation of the vagi. Lincoln recommends the preliminary tracheotomy, which is a disputed point, other writers preferring to make the tracheotomy at the time of the laryngectomy.

Probably the most decided advance in laryngology in respect to the lower respiratory tract is the new method of removing foreign bodies from the trachea and bronchi as perfected and brought forcibly to the attention of the medical profession by Killian of Freiburg. Coolidge[6] collected 1,417 cases of foreign bodies inhaled into the air passages in which no operation was done, and there was a mortality of 27 per cent. In 1,234 cases previous to the introduction of bronchoscopy in which operations had been done there was a mortality of 22 per cent. On the other hand, of 50 cases where the method of removal of the foreign body was by bronchoscopy there was a mortality of 8 per cent. Notwithstanding the uncertainty of statistics this difference certainly carries great weight. The principles of tracheoscopy and bronchoscopy consist in straightening out certain angles or corners by means of a stiff, straight tube through which the work is done under direct inspection. When the tube is introduced through the mouth into the trachea and bronchi it is known as upper bronchoscopy, and if it is introduced through a tracheal wound it is known as lower bronchoscopy. In ordinary adults it can be done without an anaesthetic by cocainizing the larynx. In nervous adults and children a general anaesthetic is employed. The patient's head is thrown well back and the tongue retracted or lifted away from the larynx, the tube is passed into the larynx, then during deep inspiration it is passed beyond the vocal chords into the trachea and bronchi. If a bronchus is to be explored a perforated tube is used to prevent occlusion of the opposite bronchus. The searched area is illuminated by small lamps within the tube or light reflected from a head mirror. A long, slender forceps is introduced and the object grasped and withdrawn. I regret that time does not permit a more careful consideration of the details of this operation. Foreign bodies lodged in the oesophagus may be removed in the same manner. A number of our specialists are now equipped for this work, although special credit is due A. Coolidge, Jr., of Boston, and Ingals of Chicago, for their active interest in it.

Ballanger[7] has written a detailed anatomical and clinical description of the tonsil, showing that certain crypts are so situated that there is poor drainage of their contents; especially is this so of the crypts emptying into the supratonsillar fossa. He mentions Dr. J. Gober's experiments proving the rapid absorption of foreign substances by the tonsil and extension down the lymphatics into the neck and chest, bringing out forcibly the very easy entrance infection may make through the tonsil and rapidly become systemic. There are three methods of treatment: 1st, destruction of the follicles, which is an uncertain process; 2d, partial tonsillectomy, after which there is always a possibility of a return of the tonsillar growth, and, 3d, complete removal of the tonsil within its capsule, which is the surest method of giving the patient immunity from tonsillar infections.

Doubtless every physician feels saturated with the literature on adenoids, and I only wish to mention that adenoids are a great factor in the physical and mental state of a child, and also have a direct etiologic relationship to diseases of the middle ear. Freer[8] of Chicago advocates the intranasal route for the removal of adenoid vegetations. With a long, slender forceps introduced through the nose, and the finger in the nasopharynx as a guide, the growth is easily and thoroughly removed. This method does not seem to have become very popular.

The treatment of hypertrophic rhinitis still causes a dispute as to the relative merits of the galvano-cautery, chemical caustics or submucous incisions. Frequently an enlarged turbinate is not actually hypertrophied but simply relaxed from a general debilitated state of the patient, or its enlargement is due to the presence of irritating secretions from inflamed adjacent sinuses; in these conditions a removal or cure of the cause will restore the turbinate to its natural size. When the enlarged turbinate is due to a real hypertrophy some severe measure is necessary to remove or contract the redundant tissue and the least damaging and destroying measures are to be sought and employed.

The search for the cure of atrophic rhinitis is as yet unrewarded with success.[3] Probably the most promising treatment at the present time is the submucous injection of paraffin. The danger of the paraffin being carried away and deposited in neighboring parts, causing blindness and other dire effects, can be prevented by using paraffin with a high melting point. When

injecting the atrophied turbinate cocaine should not be used, as it increases the contracted state of the turbinate. Cold paraffin should be used and the injections started posteriorly, only a small quantity being injected at a time. A cure is claimed when foetor disappears and crust formation ceases. Zaalberg, of Amsterdam, reports 60 cases of atrophy treated by this method, of which 20 were cured, 35 improved and 5 were failures.

The nasal septum is not lacking in its attraction for operative interference. A partial list of the operations that have been advocated shows plainly the amount of attention that has been paid to this particular field[9]: The Ash operation, or crucial incision; Moures' method of severing the maxillary crest and another incision to make a movable triangular flap, avoiding the crucial incision of Ash; the Douglas operation of incising through the septum along the greatest angle of deflection; the Gleason U-shaped flap; Roe's fenestrated or star-shaped forceps operation; the Kyle Fetterolf operation; Bosworth's plan of "sawing a new septum out of a thick and crumpled one, just as a straight board is sawn out of a crooked log"; the submucous operation which has been so fully discussed by Killian, Kreig, Hajek, Menzel, Jansen, Freer, Ballanger and others; the Harrison Allen method of severing the maxillary crest by a chisel placed beneath the upper lip; Loewes' operation applicable in anomalies situated most anteriorly; and Gaudier's method of incising the upper lip and retracting it over the nares. At present all operations have given way to the submucous method, and it really seems the most advisable method in the majority of cases, its great advantage being the preservation of the septal mucous membrane, promoting rapid healing and preventing in a great degree post-operative incrustation. This method is also applicable to removing redundant septal tissue and small outgrowths which in many cases cause nasal obstruction of septal origin. Performed under cocaine this operation is a severe test of the endurance of the patient and the operator, so, many operators are now performing it under general anesthesia. We are occasionally reminded of the dangers of this method when too much of the cartilaginous support is removed with a consequent falling in of the nose, buttonholing the mucous membrane followed by a persistent perforation, and hemorrhage into a submucous pocket with infection and suppuration. There are so many possibilities in the various

spines, spurs and curvatures of deformity of the septum that it is incredible that any one method will do in all cases, each case needing special study as to its individual needs.

Finally, and probably of greatest importance to the welfare of the patient, is the rapid increase in the knowledge of accessory sinus empyema; also to be noted with great satisfaction is the swing of the pendulum toward conservative rather than radical methods of treatment. A timely warning by [10]Dr. D. Bryson Delevan was read at the last meeting of the American Laryngological Association, calling attention to the ultimate results of the radical sinus operation upon the patient's general health as well as the local conditions; the possibility of prolonged post operative neuralgia; the effect of great destruction of nasal structures on the adjacent parts and with reference to prolonged crust formation. By the mildest methods of promoting free drainage and cleansing irrigations many cases heretofore believed to be operative are cured. This is especially true where the maxillary sinus is alone involved, which in many instances can be cured by direct irrigations through an anterior perforation in the inferior meatus. When the amount of pus brought away in the irrigations remains the same after several weeks of regular treatment, the foetor persists and transillumination shows no improvement, then the radical cure by operating through the canine fossa must be resorted to.

In regard to the frontal sinus [11]Cornelius G. Coakley has shown that great aid in the diagnosis of frontal sinus suppuration can be obtained by the use of the x-ray. The conclusions to be drawn from Dr. Chisholm's experiments along this line are: 1st, that an empty frontal sinus with normal mucous membrane shows a clear, sharp outline; 2d, that a frontal sinus filled with fluid when the membrane is normal presents a cloudy appearance with the outline of the sinus less sharply defined; 3d, from the intestinal mucous membrane experiments it is fair to infer that a frontal sinus lined with thickened, hypertrophied, or so-called polypoid mucous membrane, will present the same blurred appearance as one filled with fluid; and, 4th, that the shadows found in good skiographs indicate disease, but whether the shadow is due entirely to secretion in the cavity or to thickened mucous membrane or both cannot be determined by a study of the plate.

The varieties of treatment of frontal sinus empyema have somewhat increased. [3]Ingal's endonasal method is very interesting,

and he strongly advocates it in all cases of frontal sinus suppuration where the probe can be passed into the frontal sinus from the nares. He has devised a pilot burr operated by an electric motor for enlarging the frontonasal canal and a self-retaining drainage tube for irrigation. On the other hand, Beaman Douglas states his belief that such procedures are unjustifiable and dangerous. He would restrict surgical interference by way of the nose to middle turbinectomy, removal of diseased tissue from the region of the middle meatus and irrigation of the sinus. Anything more than this in the way of endonasal surgery he fears would dangerously increase the possibility of entering the cerebral fossa by perforating the cribriform plate or through the posterior wall of the sinus. The radical treatment of frontal sinus suppuration has been well discussed by [12]Coakley giving his experience with the Ogston Luc and the Kuhnt operations, and citing 104 cases treated by the open operation, in which sufficient of the anterior wall of the cavity is removed to insure a thorough removal of pus and mucous membrane, then the cavity is packed and repacked over a prolonged period of time, stimulating the formation of granulation tissue, obliterating the cavity entirely. His results with this operation were most successful.

The methods of attacking suppurative disease of the sphenoid and ethmoid sinuses have not changed nor has there been any marked advance in diagnostic methods relating to disease of those cavities.

Bibliography.

[1]Donaldson; *New York Med. Jour.*, 1890, LII.
[2]Douglas; *Laryngoscope*, 1900, VIII.
[3]Knight; *New York Med. Jour.*, October 13, 1906.
[4]Delevan; same Jour., 1896, LXIV.
[5]Lincoln; *Tr. Am. Laryngolog. Assoc.*, 1903.
[6]Coolidge; *Annals Otol., Rhin. and Laryng.*, Dec., 1906.
[7]Ballanger; *Tr. Am. Laryngolog. Assoc.*, 1906.
[8]Freer; same Trans.
[9]Winslow; same Trans.
[10]Delevan; same Trans.
[11]Coakley; same Trans.
[12]Coakley; same Trans., 1905.

Dr. R. S. Lamb said that the paper had been most thorough and was to be highly commended. Dr. Bennett had summed up the final conclusions of the best men of the country. The fact

that submucous resection of the septum is so prevalent may be because the method is new; but its popularity may also be due to its adaptability to such a variety of conditions. As indicated in the paper, diseases of the accessory sinuses are certainly more conservatively treated; the specialists and the general practitioners have finally come to occupy common ground with regard to these conditions.

Dr. Dye desired to thank Dr. Bennett for a most interesting paper. He had nothing to add to it.

Dr. Polkinhorn said that Dr. Bennett's paper showed evidence of much research and was to be commended.

He took exception to the advocacy of complete removal of the tonsils, as not being in line with true progress. He asked if the majority of rhinologists find that the septum is replaced after resection? That has been a disputed point. As to permanent perforation of the septum, some men do not believe that the condition is undesirable; some good may be done by allowing perforation to remain.

Dr. J. D. Morgan congratulated Dr. Bennett upon his paper, and expressed the opinion that the practice of reviewing the separate departments of medicine each year is an admirable one. Dr. Morgan was disappointed that the paper offered no additional aid with regard to the treatment of tuberculous laryngitis; the methods seem not to have changed in the past eight or ten years. As to removal of the tonsils, particular attention should be directed to the crypts in the supratonsillar fossa, because of the imperfect drainage from this region; he has found that in suppurative cases, the incision must often be made high up to reach this area.

Dr. S. B. Muncaster reported a case of unusual interest. A lady had come to him for treatment of the throat, for the relief of a most distressing impairment of the voice. She had recently had a surgical operation in Baltimore, and thought that the ether had injured the larynx in some way. Intralaryngeal inspection revealed nothing to account for the symptoms; but inspection of the neck showed a small lump on one side of the larynx due to slight displacement of the cartilages. He pressed a ring of cartilage into its normal position, and her voice immediately resumed its normal quality.

Dr. Bennett said that the renewal of the septum after resection is still a mooted question; the majority of operators claim that after removal of a portion of the septum with a flap brought down for closure, resistance to pressure after recovery indicates renewal of a firm septum. The contention has never been proven by histological examination. Complete tonsillectomy is ideal in theory; the question as to its practical utility remains open. The tonsil is a most important gland for the absorption of foreign matters; and hence it is also a capital entrance for infection. If

in hypertrophy the guillotine alone is used, the crypts remain open and infection is still possible. The normal tonsils are protective filters, but when diseased they lose the filtration power and may as well be removed.

He had found no endorsement of the electrical treatment of atrophic rhinitis; infiltration with paraffin is the only good method.

CASE OF RECURRENT SARCOMA TREATED WITH TOXINS.*

By GEO. TULLY VAUGHAN, M. D.,

Washington, D. C.

Dr. Vaughan said that physicians very properly regard sarcoma as a dreadful and dangerous disease; statistics show that it is even more malignant than cancer. Wyeth stated that out of all the sarcomatous patients treated by him in fifteen years, only one was living, and that one had had suppuration after operation. It is, therefore, clearly the duty of every surgeon to study any method which holds out hope of relief or cure of this disease, and Coley's method of inoculation of mixed toxins deserves such study. Dr. Vaughan briefly reported four cases of sarcoma operated upon by himself:

1st. Sarcoma of right clavicle, removed in 1895. Examination showed the neoplasm to be a mixed-cell sarcoma. The patient recovered, and has had no recurrence in twelve years.

2d. Melanotic sarcoma of right ankle and leg, operated upon in 1898—nine years ago. He had at first hesitated as to the diagnosis, but finally amputated. There has been no recurrence.

3d. Sarcoma of right ulna, following a green-stick fracture, in a young man, 17 years of age. The operation was done December 18, 1898, and there was no recurrence until 1906, when, after nearly eight years, a large tumor appeared in the abdomen. This patient was sent to Dr. Coley, who treated him with the toxins and the man had improved. He was still under treatment. [Dr. Vaughan presented this patient to the Society and read a report of the case from the *Annals of Surgery*, March, 1907.]

*Reported, with specimen, to the Medical Society, March 20, 1907.

4th. Round-cell sarcoma of the tibia at the knee; amputation at the hip in 1902; no recurrence.

Coley has had some success with his method. He has published the results of treatment in 71 cases of sarcoma of bones; he has to his credit: living, after 3 years, 10; after 5 years, 8; after 6 yeras, 3; after 8 years, 1; after 10 years, 1. It must be understood that he does not advocate treatment by toxins exclusively; the appropriate and most radical operation practicable should be performed. Few are able to get the same good results as are obtained by Coley.

Dr. Chappell said that to the general practitioner the possibility of treating sarcoma by the administration of toxins should be of the greatest moment. He inquired as to the nature and mode of preparation of the toxins.

Dr. Balloch said that unfortunately he had been unable to obtain the favorable results reported by Coley; and his own experience must be the same as that of the majority of surgeons, because Coley's method is not generally endorsed. But in the hands of Coley himself a considerable degree of success has been attained, and his figures may be relied upon, as he is a man incapable of exaggeration. The case presented by Dr. Vaughan showed plainly what may be done.

The cases reported by Dr. Vaughan as cured by operation were to his great credit. Of Dr. Balloch's six cases all had died except one operated upon only two years ago.

Dr. D. S. Lamb mentioned a case of sarcoma of the jaw, in which much of the right superior maxilla had been resected by Dr. J. Ford Thompson, eleven years ago. There had been no recurrence.

Dr. Snyder congratulated Dr. Vaughan upon his successful cases. Of Dr. Snyder's cases all had died except one.

Dr. Vaughan said that all the cases reported by him were more than five years old and all were living. In reply to Dr. Chappell he said that Coley's fluid was composed of a mixture of toxins of the *streptococcus* of erysipelas and the *bacillus prodigiosus*. Dr. Vaughan gave a short description of the mode of preparation and administration. He repeated that Coley recommends early operation in sarcoma, and used the toxin treatment as an adjuvant and in inoperable cases.

CASE OF LEFT POSTERIOR TIBIAL THROMBOSIS FOLLOWING RIGHT SIDE ABDOMINAL OPERATION.*

By ARTHUR A. SNYDER, M. D.,

Washington, D. C.

The patient was a woman, age 49, who for five years had had a mass in the right inferior quadrant of the abdomen ; the tumor increased in size and became painful at each menstrual period. Mayo's operation for abdominal hernia was done three years ago. In July, 1906, there was a right-side cellular infection, and in January, 1907, an abscess ; an incision was made January 15th and pus was evacuated. As the discharge through the abdominal wound became feculent, it was thought that the tumor was an old appendical abscess. Two days after the abdominal operation, symptoms of thrombosis of the left posterior tibial artery suddenly appeared ; gangrene of the leg followed and the limb was amputated February 18. [The left tibial artery containing the thrombus was exhibited.] In a few days a fecal abscess, for which rectal irrigations were used, and temperature became normal. The question of special interest was whether the thrombosis was due to the abdominal condition ; and, if so, why did it occur at a point so widely removed from the primary lesion?

Dr. Snyder also spoke of possible etiological factors, as Traumatism, Tight bandage, Pathological bacteria, Toxins in the blood, Injury to epigastric vein and extension of thrombus in phlebitis, and loss of equilibrium between blood and vessel.

Dr. Mackall said that if the thrombosis had its origin from the abdominal abscess, it could have arisen only in two ways : from an embolus set free at the time of operation, or from general blood infection. It would hardly be possible for an embolus to pass through the pulmonary blood channels, thence through the left heart, finally to be lodged at such a distant point. Pulmonary infarction would almost surely have taken place instead. To determine whether the thrombosis were due to infection from the abscess, it would have been necessary to study the bacteriology of both lesions. He was inclined to the opinion that the thrombosis arose from some local injury at the time of operation.

*Reported, with specimen, to the Medical Society, March 20, 1907.

CASE OF FIBROIDS OF UTERUS.*

By J. TABER JOHNSON, A. M., M. D.,

Washington, D. C.

The patent was a colored woman, 50 years of age, married many years, nulliparae. The tumor had existed for 12 years, but had given rise to no symptoms except those due to the weight of the tumor. Her urine was highly albuminous, and contained casts of every description; the heart was enlarged, and loud murmur was present. Her condition was such that operation was demanded in spite of these adverse circumstances. The usual more or less globular shape of uterine fibroids was replaced in this case by a multilobular structure extending from the ribs down into the pelvic cavity, and very difficult to deliver. The patient died, probably from shock. The case was illustrative of the injurious effects these tumors sometimes have upon the heart; and the specimen illustrated the tendency of fibroids to undergo degeneration; evidence of calcareous, purulent, and probably malignant degeneration could be seen in the specimen.

Dr. Mackall asked what was the character of the cardiac murmur? Disease of the aorta or aortic regurgitation might be expected to follow the long continued pressure of the tumor.

Dr. Prentiss Willson, at Dr. Johnson's request, replied that the murmur was that of mitral regurgitation.

RESPONSIBILITIES OF THE PROFESSION.—It is noteworthy that physicians realize as never before the benefits of organization, not only to individual members, but also to the medical profession in its complex relations to the general public. While practically all of the States of the Union have taken final action and have adopted the "essentials to uniformity" of organization, the work has not as yet been completed. In this direction, the results already accomplished by Dr. J. N. McCormack are worthy of the highest commendation. Moreover, there are at present to be found scattered throughout the length and breadth of our land many volunteers who have taken up the work with zest and earnestness.—*Jr. A. M. A.*

*Reported, with specimen, to the Medical Society, March 20, 1907.

THE RADICAL TREATMENT OF INGUINAL ADENITIS.*

By WM. A. JACK, Jr., M. D.,

Washington, D. C.

According to Gray, the inguinal glands are divided into two groups, an upper oblique set, which is disposed irregularly along Poupart's ligament, and receives the lymphatic vessels from the integument of the scrotum, penis, parietes of the abdomen, the perineal and gluteal regions, and the mucous membrane of the urethra ; and an inferior vertical set which surrounds the saphenous opening in the fascia lata, a few glands being sometimes to a variable extent found along the saphenous vein. This latter group receives the superficial lymphatic vessels from the lower extremity.

The deep inguinal glands are placed beneath the deep fascia around the femoral artery and veins. They are of small size and communicate with the superficial glands through the saphenous opening.

Inguinal adenitis may arise from any irritation or infection of the area drained by these glands.

The majority of cases of inguinal adenitis are caused by syphilis, gonorrhoea, chancroid, giving rise to the condition known as as bubo and among the laity as *blue balls.*

The treatment of syphilitic adenitis is of course the constitutional treatment for syphilis. The glands should never be extirpated even if suppuration has ensued but should be incised and drained and the treatment pushed to the limit of tolerance on the part of the patient's stomach. The chancroidal and gonorrheal infection of these glands is another proposition entirely and requires more or less active treatment directed to the urethra, chancroids and the glands themselves.

In a certain per cent. of cases cauterization of the chancroids, irrigation of the urethra in gonorrhea, with application of 2 per cent. guaiacol ointment to the enlarged glands, will be sufficient to cause resolution and the patient be spared the necessity of an operation. This treatment is more successful in private than in hospital cases. In other cases, no matter how much local treat-

*Read before the Medical Society, March 6, 1907.

ment is used, the glands break down and a discharging sinus results that sometimes takes months to heal.

The abscess may be incised, curetted and packed, but this method while producing good results, is tedious and requires daily dressing by the medical attendant.

The extirpation of the infected glands is the quickest and most rational method of treatment so far brought to the notice of the profession. The technic of this operation as put forth in the text books is a straight incision over the mass and shelling out of each separate gland. The results are not always good; the wound-edges often turn in and the femoral vein is sometimes torn. Again the periglandular tissue is not removed by this method.

I wish to bring to your notice a method of extirpation of these glands that has been used with success in ninety cases.

The cause of infection was gonorrhea in 30 cases, or $33\frac{1}{3}$ per cent., chancroid in 30, or $33\frac{1}{3}$ per cent., and gonorrhea and chancroid in 30, or $33\frac{1}{3}$ per cent. Pus was present in 45, or 50 per cent. of the cases operated on.

Primary union was secured in 72 cases, or 80 per cent. In 45 cases, or 50 per cent., both superficial and deep sets were involved, rendering necessary the exposure of the femoral vessels.

The period of confinement to bed was from seven days to two weeks, with an average of ten days. This is an important item in the case of a working man. The after results were good in all cases, the scar being flexible, and there was no induration around the wound.

The operation is comparatively easy of execution, merely requiring the knowledge of regional anatomy that should be possessed by any one who pretends to do operative work.

The instruments required are 4 pairs of artery clamps, 1 knife, 1 pair scissors curved on the flat, 1 round needle, 1 sharp needle, 1 pair needle forceps and 1 pair rat-tooth forceps, with catgut and silkworm gut.

The technic employed is somewhat different from that mentioned in the text books and might be called block dissection.

The incision through the skin is elliptical, with its long diameter parallel to Poupart's ligament. Its length and width vary according to the amount of glandular swelling. The upper incision is deepened until the aponeurosis of the external oblique

is reached. The carrying of the incision down to the aponeurosis is the key to the operation. The finger is then inserted in the wound and the glandular mass loosened from its bed, the lower incision is completed by cutting down on the finger which has been passed under the glandular mass and the entire block of tissue is removed including the elliptical portion of skin which has not been detached from the underlying tissues. Two or three small blood vessels may require ligation, but they can usually be controlled by torsion. The superficial fascia is brought together with a running suture of No. 2 catgut, the skin is sutured with a subcuticular silkworm gut.

If the glands around the saphenous opening are involved the incision is extended straight downward over the course of the femoral vessels and the enucleation done by means of the finger as before. In cases involving the deep glands an incision is necessary through the fascia lata long enough to allow of removal under control of the eye.

The advantages of this method are first, all diseased tissue is removed allowing immediate closure of the wound ; second the removal of the elliptical portion of skin makes coaptation easy without the annoying turning in of the skin-edges so often seen in operations for this condition ; third, few instruments are necessary ; fourth, economy of time, the entire operation should never take over half an hour ; and fifth, the short period of confinement to bed.

Dr. Abbe said the whole question of the surgical management of adenitis is interesting, especially to men who work in the dispensary clinics where so many of these cases come for treatment. Early cases, of course, do not call for radical measures and some resolvent may be used. When radical measures become necessary, however, the method advocated by Dr. Jack is a good one and in line with the modern idea of complete excision of suppurating tracts. The statistics of the results obtained by Dr. Jack are excellent.

Dr. Hasbrouck congratulated Dr. Jack upon the results obtained by his method, and called attention to the mode of treatment devised by W. K. Otis and applicable to suppurating buboes, the condition in which the adenitis usually is found when these patients apply for treatment. The technic consists of puncture of the abscess, evacuation of the pus, and injection of 10 per cent. iodoform ointment, until the bubo is moderately distended. The ultimate results are no better than by Dr. Jack's method, but in

working men this technic does not require confinement to bed ; pain and soreness are absent ; convalescence is quick and satisfactory ; the glands are disinfected and there is no further glandular involvement ; there is no scar and nothing to interfere in case of subsequent operation in this region.

Dr. Hasbrouck read notes of eighteen cases successfully and satisfactorily treated by Otis' method. The radical operation is to be encouraged, but for working men who cannot or will not lose time, the Otis method should be considered.

Dr. A. F. A. King inquired as to the source of Dr. Jack's statistics and as to the operators using the method described by him. He highly commended Dr. Jack's paper for its scientific spirit and its concise statements.

Dr. Jackson expressed his pleasure at hearing the paper. His experience in the dispensary has been that most cases get well promptly with simple incision and curettage. Dr. Hasbrouck's records were extremely good. Dr. Jackson took occasion to report a case of inguinal adenitis of obscure origin and character. This patient lived in South America ; he had an inguinal hernia and wore a truss. He rode horseback constantly and gave a history of receiving a bruise in the groin. He came to the States and while here, a mass appeared at the point of pressure of the truss-pad ; the tumor was very hard, not very painful and about half the size of the fist. Some fever was present at first but subsided after a short time. A bandage was applied in place of the truss; applications of guaiacol were made; the protiodid was given, although there was no syphilitic history ; none of these measures influenced the swelling. Then he was put to bed and was found to be having a low range of fever. As two months after the appearance of the swelling, the patient wished to have herniotomy performed ; a consultation was had to determine the advisability of operation. Careful examination indicated that the mass extended within the abdominal wall, apparently lying upon the iliacus muscle. The obscurity of the condition led the doctor to abandon the operation and tentatively to keep the patient on mercury. Finally the swelling pointed and fluctuation could be felt ; the abscess was opened and a sinus was found extending in the direction of the deep mass. The protiodid being continued, the inner tumor disappeared, and the superficial mass was excised. The pathologist reported that it was simply inflammatory tissue.

Dr. Roberts said that army surgeons are called upon to treat very many cases of inguinal adenitis. The radical method of excision of the glands before suppuration was introduced ten years ago, but was not to be commended. The objection to the old method of simple incision and curettage was that it kept the men in bed too long. The injection of iodoform ointment is the best treatment yet devised and was pretty generally adopted five years ago. A naval surgeon, in an endeavor to avoid all scar, has so

modified the method as to evacuate the pus through a syringe needle of sufficiently large caliber, and then, through the needle *in situ*, successively to wash out the abscess and to fill it with the iodoform ointment.

Dr. Jack said that he had given the iodoform ointment treatment a thorough trial ten years ago but had not gotten good results; he found that the patients came back later for removal of the glands. His insuccess may have been due, in part, to the difficulty of getting negro patients to return for treatment with any degree of regularity. The plan adopted at Freedmen's Hospital is to excise the whole chain of glands that contain suppurating members, and to cauterize all chancroids with the actual cautery. The scar left after radical excision is perfectly soft and pliable. Dr. Jackson's case was, no doubt, due to pressure from the truss. Dr. Jack had seen one such case in an old lady; a strangulated and necrotic gland was found in the external inguinal ring. In reply to Dr. King, he said that his statistics were all derived from personal work.

CASE OF STRANGULATED VENTRAL HERNIA.*

By I. S. STONE, M. D.,

Washington, D. C.

Mrs. D., colored, age 65, was first admitted into Columbia Hospital, Washington, in 1902, and was treated for a large umbilical hernia at that time. It was impossible to obtain muscular approximation, and we were not satisfied with the result, which was unsatisfactory owing to the presence of distended and prolapsed viscera.

My attention was again called to the patient, March 14, 1907, when she was readmitted into the hospital for a strangulated ventral hernia; she also had bronchitis. Her condition was extremely critical, and without much delay she was taken to the operating room and an effort made for her relief. We found the case a sadly neglected one, and the operation most tedious. The hernia was double; the intestines protruding through two openings in the median line. The larger specimen, which consists of the caecum and adjoining ileum and ascending colon, was not only firmly adherent to the sac, but the coils are seen adherent

*Reported, with specimen, to the Medical Society, March 27, 1907.

upon themselves. The acute symptoms were, however, due to strangulation of a section of ileum at a point much higher up the canal. The small specimen merely represents the reunited bowel after the removal of the strangulated and perforated portion, which was about three inches in length. Broncho-pneumonia developed during the day after the operation and proved fatal 53 hours afterward. At the autopsy, which was only a partial one, these sections of intestine were removed and are now presented for inspection by the members of the Society. The smaller section shows a good result of an end-to-end anastomosis with the Connell suture. The peritoneal sutures (of thread) have been torn and displaced during the excision of the bowel at the autopsy. There was no leakage after the operation, and the patient had several free bowel movements.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, February 20, 1907.—Dr. D. K. Shute, President, in the chair ; about 60 members present.

Dr. Sowers, for the Executive Committee, reported that the Osteopathic Bill had been defeated in the House.

Dr. McLaughlin reported that the committee appointed to secure better accommodations for the Society had accomplished its work. The committee was discharged.

Dr. S. S. Adams moved that the Society give an entertainment in honor of Dr. J. Ford Thompson upon the attainment of his 70th birthday and the 50th year of his professional life ; and that the Chair appoint a committee, the members to be selected to represent the institutions with which Dr. Thompson had been connected, to arrange the details of the entertainment. Unanimously carried. See ANNALS, March, 1907.

The Chair appointed on the Committee : Chairman, S. S. Adams, Children's Hospital ; G. Wythe Cook, Garfield Hospital ; G. L. Magruder, Emergency Hospital ; T. C. Smith, Medical Society ; G. M. Kober, Georgetown Medical College ; A. F. A. King, George Washington Medical College ; J. Taber Johnson, Washington Obstetrical and Gynecological Society ; W. F. R. Phillips, George Washington University Hospital ; C. W. Richardson, Episcopal Eye, Ear and Throat Hospital ; T. N. McLaughlin ; Louis Mackall ; J. D. Morgan.

Dr. Vaughan reported two cases, with specimens :

1. Suppurating Appendicitis in Scrotal Hernia; 2. Posterior Bursa of Knee. Discussed by Drs. E. P. Magruder and D. S. Lamb. See pp. 138 and 139.

Dr. Roy read the paper for the evening; subject, "The Circulatory System in Gastrointestinal Intoxication." Discussed by Drs. J. D. Thomas, Nichols and Ralph Walsh. See p. 132.

Wednesday, February 27.—Dr. Shute, President, in the chair; about 70 members present.

Dr. Adams, Chairman of the Committee on the Thompson Dinner, reported that the dinner had been arranged for Thursday, March 7, at Rauscher's; that a loving-cup would be presented to Dr. Thompson; and that members by invitation and other physicians not members of the Society wishing to participate would be welcomed.

Dr. Jas. F. Mitchell reported the following cases, with specimens:

1. Sarcoma of Femur; 2. Gall Bladders and Gall Stones; 3. Carcinoma of the Rectum. Discussed by Drs. Shands, D. S. Lamb, Brown Miller, Fremont-Smith and Dixon. See pp. 146 and 147.

Dr. MITCHELL said that in the present status of gallbladder surgery, cholecystectomy in most cases is inexcusable. He wished to present, however, two types of *gallbladder disease* calling for extirpation:

1. A small, hard, atrophic bladder, filled with stones. This specimen was taken from a man, age 28. He was first seen in February, 1904, suffering with an acute attack of pain, with high fever of one day duration; as the examination was made at night, jaundice was not noticed and the location of the pain suggested appendicitis. The next morning jaundice was very evident and an operation was advised. The patient, however, disappeared from observation, until one year later, when he turned up with another attack. After a month a third attack occurred and he then consented to the operation. The gallbladder was found as described and was extirpated; there was no leakage and the patient fully recovered.

2. A large cystic bladder, containing clear fluid and one small stone obstructing the duct. This patient also made a good recovery.

Dr. John C. Wise, U. S. Navy, read the paper for the evening: "The Evolution of the Naval Medical Service, and the Naval Medical School." Discussed by Drs. Kober and E. L. Morgan. See p. 117.

Wednesday, March 6.—Dr. Shute, President, in the chair; about 40 members present.

Dr. D. S. Lamb, for the Historical Committee, reported that the

preparation of engravings was delayed by the failure of many members to present their photographs. The Corresponding Secretary was instructed to repeat the request for photographs on the weekly program cards.

Dr. W. K. Butler, Vice President, took the chair.

Dr. J. D. Thomas reported a case of Aneurysm of the Arch of the Aorta. Dr. D. S. Lamb presented the specimen from this case. Discussed by Drs. S. S. Adams, J. D. Morgan and D. S. Lamb. See p. 142.

Dr. D. S. Lamb presented a specimen of Perforating Appendicitis with Croupous Ileo-colitis. Discussed by Dr. J. W. Chappell. See p. 145.

Dr. Jack read the paper for the evening. Subject: "The Radical Treatment of Inguinal Adenitis." Discussed by Drs. Abbe, Hasbrouck, A. F. A. King, Jackson and Roberts. See p. 162.

Wednesday, March 13.—Dr. Shute, President, in the chair; about 60 members present.

Dr. W. K. Butler complained of the inadequate telephone service for members attending the meetings. The Corresponding Secretary was instructed to communicate with the proper authority and ask that adequate provision be made to transmit messages to members.

The Chair announced the receipt of a communication from the Health Officer transmitting a copy of proposed regulations to prevent the spread of contagious diseases, and asking for an expression of opinion by the Society upon the measures contained therein.

The communication was referred to the Executive Committee for consideration and report within two weeks.

Dr. D. S. Lamb, for Dr. Bradfield, reported a case of Hydatidiform Mole, with specimen. Discussed by Drs. I. S. Stone, J. P. Miller, A. F. A. King, Reyburn and Heiberger. See p. 140.

Dr. Stavely reported a case of Papillo-adenoma of the Sigmoid, with specimen. Discussed by Dr. Claytor.

Dr. Stavely read the essay of the evening. Subject: "Floating Spleen." Discussed by Dr. I. S. Stone.

Wednesday, March 20.—Dr. Shute, President, in the chair; about 75 members present.

Dr. Balloch, for the Executive Committee, reported the following recommendations:

1. That the Medical Society thank Dr. G. Lloyd Magruder for his excellent work in seeking the source of contamination of the milk supply in the District of Columbia.

2. That a "draft of certain proposed regulations for the prevention of the spread of certain contagious diseases," submitted by the Health Officer, be endorsed by the Society.

The report was adopted.

Dr. A. A. Snyder presented a specimen of Posterior Tibial Thrombosis following right side Abdominal Operation. Discussed by Dr. Mackall. See p. 160.

Dr. Vaughan reported a case of Recurrent Sarcoma Treated with Mixed Toxins. The patient was presented. Discussed by Drs. Chappell, D. S. Lamb, Balloch, S. S. Adams and Snyder. See p. 158.

Dr. D. S. Lamb reported two cases of Pneumonia and one of Cancer of the Stomach, with specimens.

Two cases of *pneumonia*. 1st. *Red* hepatisation.—From a man, age 42, colored, coachman, who was admitted to hospital March 9, 1907, and died on the 12th. When admitted he was unconscious and delirious; urine scanty, high colored and markedly albuminous; temperature, however, only 98.6 to 99.4; pulse 86 to 88; respirations 24. He became worse; defecation and urination became involuntary; the breath was urinous; temperature 98.2 to 99; pulse 86 to 100; respiration 22 to 24. The post-mortem examination showed the lower lobe right lung in red hepatisation almost throughout, with corresponding exudate on pleura; croupous pneumonia. The upper lobe and the left lung were normal. The heart was normal; ascending aorta atheromatous. The liver was cirrhotic, weighed 62 ounces and showed old adhesions and thickening of capsule. The spleen was small but appeared normal. Kidneys congested. The anatomical conditions represented about the 5th day of the disease. The acute congestion of the kidneys explained apparently the albuminous urine. The cirrhosis of liver, though not extensive, doubtless diminished the man's resisting power. It is noticeable that the temperature and breathing were but little above normal. He would not have died of the pneumonia except that he had other lesions.

The other case of pneumonia, also croupous, was in the stage of *gray* hepatisation. Another man, also 42 years old and colored; a fisherman. He was admitted to hospital Feb. 15, 1907, and died the same day. Temperature 100, pulse 102, resp. 28. In this case the brain was found edematous, the heart normal, right lung in gray hepatisation, left lung edematous, the abdominal organs normal. Here also it will be observed that the temperature and breathing were not much above normal, but a much greater extent of lung was involved. The case was in probably the 6th day of the disease. No preliminary history in either case could be obtained.

Cancer of Stomach.—The interest of this specimen was mainly in the fact that almost the entire mucosa of the stomach was involved. The microscopic examination showed the condition to be cancer. This diffuse form of the growth was rather the exception. The subject was a colored man, age 32; died January

14, 1907. Dr. Lamb made the postmortem examination for Dr. E. L. Morgan. The lungs were edematous and there were old pleuritic adhesions; calcareous bronchial glands; the stomach contained some coffee-ground liquid; the other abdominal organs were normal.

Dr. Jos. Taber Johnson reported a case of Multiple Fibroids of the Uterus, with specimen. Discussed by Dr. Mackall. See p. 161.

Dr. Bennett read the paper of the evening. Subject: "A Partial Review of Laryngology." Discussed by Drs. R. S. Lamb, Dye, Polkinhorn, J. D. Morgan and S. B. Muncaster. See p. 149.

Wednesday, March 27.—Dr. Shute, President, in the chair; about 70 members present.

Dr. S. S. Adams, Chairman, presented the final report of the Thompson Dinner Committee and expressed his thanks to the members of the committee for their co-operation.

Dr. Cressy L. Wilbur was elected a member by invitation.

Dr. A. F. A. King, for the Committee on the History of the Society, submitted a report upon the progress made by the committee.

Dr. D. S. Lamb presented the following report of the Editorial Committee for 1906, which was accepted:

To the MEDICAL SOCIETY, DISTRICT OF COLUMBIA:

The Editorial Committee respectfully submits the following report:

With the number of the ANNALS for January, 1907, the fifth year of publication is ended. The following table shows the cost of publication and the number of pages for each year:

Received.	1902–3.	1903–4.	1904–5.	1905–6.	1906–7.
From subscriptions	$15.00	...	16.00	6.00	6.00
From advertisements	84.00	102.50	134.00	343.00	258.50
Sundries	2.60	...	1.45	.80	2.25
Total receipts	101.60	102.50	151.45	348.00	266.75
Expended for printing, &c	857.61	842.82	799.27	730.69	734.95
Net cost	756.01	740.32	645.82	381.89	478.20
Number of pages per year	497	500	465	410	452

The average cost of printing, distributing, &c., is $1.62 per page; if we deduct the receipts from advertisements the cost is reduced to $1.05 a page. The actual cost, therefore, is well within what was originally contemplated, namely $600.00 a year.

The value of the ANNALS to the profession outside the District is shown in the fact that many extracts are made therefrom by the *Journal of the American Medical Association*. The value to the members of the Society is shown by the fact that their papers are brought in this way to the notice of the profession generally, while if published in a volume of Transactions at the close of the year, these papers would be practically buried, because Medical Journals very rarely make extracts from Transactions. It would

seem, therefore, to your Committee that the Society has everything to gain by continuing the publication of its work in periodical form.

Dr. E. L. Morgan submitted for the consideration of the Society a proposed "bill for the regulation of prostitution;" this paper was referred to the Committee on Public Health for investigation and report.

Dr. Fremont-Smith called attention to the inadequate telephone service at the place of meeting, and the Chair appointed Drs. I. S. Stone, S. S. Adams and W. F. R. Phillips, a committee to arrange for a telephone messenger, and report.

A letter from Dr. Geo. M. Kober, Chairman of the Building Committee of the Academy of Sciences, asking for an expression from the Medical Society as to the desirability of a home for the Academy and its affiliated Societies, and as to the requirements of the Medical Society with regard to space, etc., was referred to the Executive Committee for consideration and report.

Dr. C. W. Stiles presented *Leidy's original specimen of Filaria Restiformis*, with remarks upon his study of this organism.

Dr. Stiles said that he had found in the Army Medical Museum a specimen of filaria restiformis which upon investigation proved to be the original specimen described by Leidy under that name. The specimen was presented by a physician of West Virginia, who reported that it had been passed from the bladder of a man. Close examination revealed the fact that the organism in question belonged to the cabbage-worm variety, family *mermithidae*, and not to the filaria group. How the organism gained entrance to the patient's bladder, if it actually had done so, Dr. Stiles did not, of course, undertake to say. He presented the specimen, with drawings, to the Society for inspection, for the purpose of striking filaria restiformis from the list of the parasites of man.

Dr. I. S. Stone reported a case of Strangulated Ventral Hernia, and presented the specimen of resected bowel. See p. 166.

Dr. A. A. Snyder presented a specimen of *Pedunculated Tumor of the Labium Major.*

The patient was a colored woman, 25 years of age. Three years ago a small tumor made its appearance at the muco-cutaneous border of the left labium major. The mass increased in size and acquired a pedicle, so that at the time of operation a bulbous mass was seen to hang by a long pedicle between the patient's thighs, reaching half way to the knees. The tumor seemed to be a broken-down fibrous mass—probably fibro-myxoma. Before removing the growth considerable pulsation could be felt in the pedicle, and in amputating it, four large arteries required ligation.

Dr. S. S. Adams took the chair, the Vice Presidents being absent.

Dr. Bailey K. Ashford, U. S. A., read the paper for the evening. Subject: "The Control of Endemic Uncinariasis in Porto

Rico." Discussed by Drs. Stiles, Pryor, D. S. Lamb, Claytor, I. S. Stone, A. F. A. King, Borden and Fremont-Smith. A rising vote of thanks was given Dr. Ashford for his essay and as an expression of the Society's appreciation of the immense importance of the work done by him in Porto Rico.

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EDITORIAL COMMITTEE.

D. S. LAMB, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W.
MURRAY GALT MOTTER, A. M., M. D., . . . 1841 Summit Place.

Editorial.

THE PERSONAL HISTORIES OF MEMBERS.

In the latter part of September, 1906, a blank form of request for information was sent to each active member of the Society, the form to be returned, filled out, to the Historical Committee. Many members have thus far paid no attention to the request. In some cases similar blanks have been sent a second time, asking for definite facts; some of these have been returned, others have not.

The Committee wishes to have it distinctly understood that in the forthcoming "History of the Society" the personal records of members will appear, and these records will be based partly on the records of the Society, partly on published biographical sketches, and partly on the statements of the members themselves. If the Society record in any case is meager, if there is no published sketch, and if the member makes no written statement, it is obvious that the record in his case, in the "History" will be incomplete; but the fault will not be with the Committee. It is hoped, therefore, that those members who have so far neglected the matter will promptly attend to it; there is such a thing as a "last call to dinner."

It may be added that the Committee has consulted the follow-

ing publications, namely: *Who's Who in America; American Men of Science; Atkinson's Biographies*, 1874 and 1880; *Stone's ditto*, 1894; *Watson's ditto*, 1896; *Washington Post* History of Washington, 1904; *Twentieth Century Biographical Dictionary*, 1904; and some minor publications.

Since the last statement the following photographs of members have been received, making the total to date 355.

Arnold, J. S.
Baker, R. W.
Birtwell, D. T.
Bovée, J. W.
Breneman, E. DeW.
Bryan, J. H.
Carr, W. P.
Combs, W. H.
Cook, R. L.
Drinkard, W. B.
Duncanson, H. A.
Dye, H. S.
Elliott, H. R.
Fenwick, G. P.
Fisher, R. A.
Gunion, J. P.
Hodges, J. W.
Keech, T. A. R.
Lee, Wm.
Loomis, S. E.
Lyon, S. B.
McCalla, J. M.
McWilliams, A. H.
Mallan, J. F.
Miller, G. R.
Mitchell, J. F.
Nichols, C. H.
Pierce, A. S.
Poulton, W. E.
Rand, C. F.
Shands, A. R.
Shekell, A. S.
Slaughter-Morton, R.
Smith, D. G.
Stanton, J. O.
Stone, I. S.
Townshend, S.
Tree, C. M.
Triplett, W. H.
Tucker, W. P.
Tyler, W. B.
Walsh, R.
Warren, G. W.
Wilkinson, O.
Willett, J. E.
Winter, J. T.
Wise, T. W.
Wolhaupter, D. P.
Wolhaupter, W. E.

So far, eleven "groups of eight" have been reproduced in halftone. These groups are made up according to the year of accession of the members to the Society. The completion of this part of the work is delayed by the failure to receive certain photographs that are necessary to make up the remaining groups. If those members who have thus far not responded to the request of the Committee will attend to the matter at an early date, the grouping will be greatly facilitated.

Neither the Committee nor the Society has any understanding with any photographer as to furnishing photographs of members.

The Committee would like very much to secure the loan of photographs of members who are deceased or absent from the city; these likenesses will be returned as soon as the halftones are made. Some members have already made such loans, and the Committee herewith extends its thanks for the courtesy.

THE MEDICAL EXAMINERS OF THE SOCIETY.—The book kept by the Board of Medical Examiners up to 1869 is missing. If any member knows where it is or is able to suggest where it is, the Historical Committee would be obliged to him for information.

MANUSCRIPTS OF ARTICLES written by members of the Society, but not read at its meetings, have several times been offered to the Editorial Committee for publication. The Committee has felt compelled to decline publication until after such papers should be read, or unless the author was willing to pay for publication at the estimated rate, namely, $1.50 per page. Several papers have thus been published at the expense of the authors. Of course if the Society authorizes publication without charge, of papers not read before it, the Committee will gladly obey instructions.

Reprints from the ANNALS containing an account of the dinner to Dr. J. Ford Thompson can be obtained from the printer, R. Beresford, 618 F Street, N. W., or from Dr. D. S. Lamb, at ten cents a copy.

The Editorial Committee is prepared to publish abstracts of the proceedings of the other medical societies of the District. If these abstracts are typewritten, it will very much lessen the labors of the Committee.

The President of the Parke, Davis and Company pharmaceutical house, Mr. Theodore D. Buhl, died April 7.

Dr. C. Norman Howard has removed to Warsaw, Ind. Dr. L. E. Story at last accounts was at St. Johns, Oregon.

Medical Miscellany.

Therapeutic Society, Washington, D. C.—Meeting, April 13, 1907, at the usual room, National College of Pharmacy.—Symposium on *Diabetes*.

The first paper was by Dr. Isabel Haslup Lamb, on the "Etiology and Pathology," in which the several types of the disease were described. It is a disease of the better classes; those persons leading lives of high nervous tension are especially susceptible. No single lesion has been shown to be constant; degenerations of the islands of Langerhans of the pancreas have been found in a majority of cases. The post mortem findings in other organs, especially in the nervous system, are the same as found in other diseases of deranged nutrition. The impulses following Claude Bernard's puncture of the floor of the fourth ventricle are transmitted by the splanchnic nerves, thus affecting metabolism in the villi of the small intestine.

Dr. Robt. Reyburn next read a paper on the "Mild and Grave Cases." He knew of mild cases that last for years. Patients usually do not die of the absence of carbohydrates, but after a deterioration of the system that lessens resistance and renders them liable to intercurrent diseases.

Dr. Louis Kolipinski spoke of the "Treatment" of the disease; said that milk in reasonable quantities, salads and gluten bread is proper to use; some exercise was necessary; alkalies and alkaline salts, Carlsbad and other similar waters were useful. There was no medicine that could cure the disease, but some medicines are useful in certain conditions; opium, codeia, creosote, carbolic acid, arsenic, the salicylates, iodides, hydrastis, mercury, lactic acid, glycerin and cod liver oil. In diabetic coma we are powerless. He mentioned especially two cases, one in which the sugar disappeared from the urine during an attack of typhoid fever, but reappeared after recovery from the fever; and another case, that of an old woman, who had diabetes, during which a gangrenous inflammation occurred after which the urine was normal for two months.

Dr. C. R. Dufour spoke of the eye conditions in diabetes. There are several forms of diabetic retinitis; one is the central punctate form, the typical diabetic retinitis; another the hemorrhagic. These hemorrhages are often the first sign of the disease, and lead to examination of the urine.

Dr. Kolipinski also presented several pathological specimens.

Washington Society of Ophthalmologists and Otologists.— Meeting at the Episcopal E., E. and T. Hospital, **Feb. 15, 1907.**— Dr. W. H. Fox presented a patient having a *postretinal tumor* in the right eye ; vision O. D. 20,30+ ; O. S. 20,20+ ; she had had a double ovariotomy and had also been operated on for uterine fibroid ; he thought the tumor a sarcoma of the choroid. Dr. W. H. Wilmer said that potassium iodide would hold such tumors in check for months, but as soon as discontinued they would enlarge ; they should not be confused with exudative choroiditis; he had once enucleated an eye of 20,20 vision, in which there was a melanotic sarcoma of choroid. Dr. H. A. Polkinhorn believed that the tumor was enlarging ; there seemed to be a threatening of retinal detachment.

Dr. M. Griffith presented a patient with *double aniridia*, anterior polar cataract and lateral nystagmus. Dr. O. A. M. McKimmie said that there was some development of the iris in these cases ; he recalled two similar cases.

Dr. C. W. Richardson showed a specimen of *abscess of brain* from a child who, when two years old, had suppuration from the ear ; when he saw the child it was unconscious and delirious; right ear normal; pinhole perforation in left ear, with fetid discharge ; Dr. D. K. Shute had also found congestion in left retina; Dr. Richardson operated but failed to find the abscess ; the child remained conscious two days when exploration was repeated, but again without success ; at the second dressing there was a faint blush about the wound soon followed by necrosis, dermatitis and oedema, that involved both sides of the head and face, and the child died at the end of the second week. Dr. McKimmie said that the location of the abscess was singular and rare ; there was nothing to localize it ; he thought that it might have been traumatic ; Dr. Richardson had just missed finding it. Dr. Mason remembered that Dr. Page had punctured 17 times in a similar location in one case before he found the abscess ; Dr. Mason rather expected to find abscesses of otitic origin high up or in the occipital lobe, the infection carried there by small vessels. Dr. Richardson believed, however, that the infection was preferably carried by the lymphatics.

Dr. Miller presented a patient having *laryngeal* and perilaryngeal *infiltration ;* the history by Dr. A. B. Bennett ; a man, age 52 ; his sister had died when three years old, from tuberculosis ; the patient when taken sick with a cold in Sept., 1905, weighed 225 pounds ; by Jan., 1907, he weighed 150 pounds, had lost his voice and had constant pain in the laryngeal region ; swallowing was painful ; some bronchial rales. Dr. H. S. Dye had also seen the case.

Dr. R. S. Lamb presented a patient with *optic atrophy* following acute neuro-retinitis ; treated with subconjunctival injections ; had been presented at the November meeting ; showed improve-

ment, now could read at 13 inches without glasses. Also a patient with *nebula* of right cornea, anterior polar cataract and what appeared to be a scar of the iris from inflammation caused by contact with the anterior surface of the lens and posterior surface of the cornea.

Drs. W. P. Malone and Lamb then reported somewhat similar cases of profuse hemorrhage following corneal incision preceding iridectomy for *glaucoma;* one was a colored man at the Emergency Hospital; the symptoms of glaucoma subsided; the other was a woman at the Episcopal Hospital; vomiting became persistent and the pain increased, and the eye was enucleated.

Meeting, **March 15,** at the University Club.

Dr. A. H. Kimball exhibited microscopic slides showing cupping, macrophthalmia and sarcoma.

Dr. Lamb reported a case of *retropharyngeal abscess* in an infant six months old; the abscess was low down and caused dyspnoea; an incision gave immediate relief.

Dr. Kimball read a paper on "*Sarcoma of the Eye and Appendages.*" Dr. McKimmie said that an early diagnosis was important; the disease usually occurred in the back of the eye, involving the choroid, and tension was increased; if the tumor was anterior and involved the ciliary portion, the tension might be either normal or subnormal; he had never seen primary sarcoma of the lids or caruncle. Dr. Shute believed primary sarcoma of the eye was rare; one case he had seen proved not to be sarcoma. Dr. Fox recalled the case he had presented at the last meeting, and Dr. Lamb recalled the case mentioned at the same meeting by Dr. Wilmer; Dr. Kimball recalled a case of supposed sarcoma that proved to be cysticercus.

Meeting, **April 19,** at the residence of Dr. Dye.

Dr. McKimmie reported two cases of *mastoid disease.* One in a white woman who had had pain in the left ear for ten days; on the 13th day the pain was so bad that the drum was punctured but no pus appeared; she afterward became hysterical and melancholic and talked of suicide; Dr. McKimmie operated but found no pus; there was marked sclerosis; he curetted the granulation tissue in the aditus after which all the symptoms subsided. The second case, a young woman, had pain in right ear believed to be caused by *la grippe;* paracentesis was done but the pain increased; temperature 102.8 to 104; the operation disclosed a peculiar arrangement of the mastoid cells.

Dr. Lamb presented a boy, 10 years old, who one year before had an internal *strabismus* of right eye, 55 degrees, with marked choroidal atrophy dating from birth; the operation described by Edward Jackson, cutting the internal rectus and internal half of superior and inferior recti, was done; the result was satisfactory, and training four hours a day for three months with proper correction gave 20,20 vision for near and distance, in spite of atrophy of

choroid. A second patient was a woman, age 30, with double corectopia, and coloboma of choroid; she had chorioretinitis and slightly increased tension due to eyestrain from poor correction; after two weeks treatment vision was much improved; the headache and tension subsided.

Dr. Dye read a paper on *pneumatic massage* in non-suppurative chronic *otitis media*. He believed that the massage was very helpful in the cure of chronic catarrhal deafness; he read from Kenison's paper in the *Jour. A. M. A.*, Dec. 1, 1906, and reported two cases. Dr. W. K. Butler said that he relied on politzeration and on massage with the palm of the hand or thumb, on inflation with air, and on medication; seldom used the pump; the main thing was to increase the circulation and nutrition. Dr. Bennett did not believe that the watch test showed immediate improvement after massage, but the dulness disappeared gradually. Dr. McKimmie agreed with Dr. Bennett; he had used the hand, compressed air and the electric motor, but not in acute or subacute cases; always beginning after inflation; the first stroke should be an exhaust; he always used choroform in inflation. Dr. Polkinhorn did not think that we could begin with the exhaust; the speculum did not fit every ear; he had used mentholated oil, forced into the middle ear, with benefit. Dr. McKimmie thought that a properly made speculum could be easily adjusted to any ear, and with the observation glass at an angle to the tube it was easy to see the first effect on the drum. Dr. Dye used a three-fourth inch stroke; since the patient found relief from its use the motor might run all day; he had found five minutes enough in any case; if he found too free motion in the membrane he stopped the massage.

Dr. L. S. Greene read a paper on *surgical treatment of excessive myopia* and reported a case in which both lenses were removed. He said that all high myopes should have the opportunity of an operation for relief from the constant wearing of distant glasses and the great improvement in vision that the operation gave. Briefly stated, the advantages outweigh the disadvantages in well selected cases; in the selection one must consider the age of the patient and the degree of myopia, the defective vision, and the absence of lesions of the fundus oculi. The contraindications would be good vision with glasses, the presence of lesions of the fundus, especially in the macular region, a hemorrhagic tendency and advanced age. The dangers are hemorrhage, infection, glaucoma and iritis, with possibly detached retina. He had seen 14 cases, 11 were Dr. Wilmer's and 3 were his own; no cause of regret in either case on account of the operation. Dr. Wilmer reported a case in which there was anterior polar cataract and leucoma of cornea due to old ulceration; he did an iridectomy, and the next day the lens was removed with the bandage; the case was specific with secondary glaucoma; but ten years afterward the patient with a convex lens could read J 6. He

believed iridectomy a great help to these patients. In another case with anterior polar cataract, leucoma of cornea, nystagmus and myopia, after iridectomy he obtained 20,70 vision ; the great danger was in detachment of retina. Four weeks before, he had operated on a patient with corneal scar, anterior adherent leucoma and myopia ; did an iridectomy ; vision was obtained of 20,200 without glasses. Usually there is astigmatism.

Dr. W. A. Wells read a paper on *dural vertigo and Menière's syndrome*, in which he considered the ear as the organ of equilibration and orientation. He defined vertigo as a subjective phenomenon of consciousness in which the individual as the result of erroneous afferent impulses acquires an illusive impression of disturbed spatial relations which may be referred either to himself or to surrounding objects. Vertigo may be nothing more than a sensation of swimming in the head, but is usually attended with a feeling of instability that may reach such a degree that the patient is unable without support to maintain his equilibrium. Dr. Wells discussed several cases of Menière's syndrome. Dr. Bennett reported a case in which he had done a radical mastoidectomy in chronic suppurative otitis media ; at the first after dressing a sudden change of position was made and the patient fainted ; and this was repeated at subsequent dressings ; but the semicircular canals had not been injured.

Dr. Wilmer said that some years ago potassium iodide had been used with much relief. Dr. Dye some 18 years ago had used from 40 to 80 grains of the drug three times daily in chronic catarrhal conditions, but this treatment had died out. Dr. Wells had used the sodium iodide with the best results.

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Rogers, J. D., 721 8th street, n. w.
Roman, Frederick O., 1435 9th street, n. w.
Roy, Philip S., 1200 Massachusetts avenue, n. w.
Ruedy, Robert C., 625 Maryland avenue, n. e.
Ruffin, George M., 1101 14th street, n. w.
Ruffin, Sterling, 1335 Connecticut avenue, n. w.
Savage, L. S., Bennings, D. C.
Schneider, Francis A., 103 Rhode Island avenue, n. w.
Scott, James Foster, *A. B.* The Albany.
Seibert, E. G., *Phar. G.*, 916 14th street, n. w.
Sellhausen, E. A., 640 G street, n. w.
Shands, A. R., 901 16th street, n. w.
Shaw, John W., 1453 Rhode Island avenue, n. w.
Shoup, Jesse, The Roland.
Shute, Daniel K., *A. B.*, 1719 De Sales street, n. w.
Simpson, John C., 1421 Massachusetts avenue, n. w.
Smith, Dwight Gordon, 3121 14th street, n. w.
Smith, Thomas C., 1133 12th street, n. w.
Snowden, Edgar, 1909 Q street, n. w.
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Sothoron, Elmer H., *B. E.*, 1921 I street, n. w.
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Sprigg, William M., The Rochambeau.
Squire, Susanna J., 1736 North Capitol street.
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Story, Leon E., The Iowa.
Stoutenburgh, John A., 116 2d street, s. e.
Street, Daniel B., 1000 9th street, n. w.
Strickler, W. B., 815 M street, n. w.
Strobel, M. Louise, 16 R street, n. w.
Stromberger, H. H., 109 I street, n. w.
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Suddarth, James L., 817 North Capitol street.
Suter, Henderson, 3050 N street, n. w.
Suter, Norwood, *A. B.*, 911 16th street, n. w.

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Thomas, John D., *A. B.*,	1603 19th street, n. w.
Thompson, Edgar D., *A. M.*,	1247 North Capitol street.
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Thompson, J. Lawn,	805 12th street, n. w.
Thompson, Millard F., *D. D. S.*,	484 Maryland avenue, s. w.
Thönssen, Wm. J. R.,	315 C street, s. e.
Tiefenthaler, B. F.,	516 10th street, n. w.
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THE CONTROL OF EPIDEMIC UNCINARIASIS IN PORTO RICO.*

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Every country has some blighting communicable disease which, more than any other, menaces its inhabitants, retards its highest development and, taking an unwelcome part in its industrial life, forces men to count with it in every commercial venture.

Tuberculosis, typhoid, malaria, dysentery, trypanosomiasis, yellow fever, cholera, plague and many others, have earned this unenviable preeminence, some in one place, others in another. Some are more easily controlled than others; some are not controlled as epidemics at all; most are capable of more or less control; but usually not one, two, or three highways are to be guarded, but a state of siege with its privations and heavy cost must be indefinitely maintained. From some, whole countries have been freed; from others, safety has only been secured after unremitting vigilance.

It is rare indeed that a country of a million people, literally consumed by a pandemic, can be assured of a simple and certain prophylaxis against its reigning disease, and, still rarer, of a true cure of those who are invaded by it, even of those dangerously ill from its severer forms.

I desire to bring before you briefly tonight the unique facts of the great disease of Porto Rico, until recently known as "la Anemia," now known to the people of that country as uncinariasis, and will discuss the means employed to control its ravages.

Mortality.—From twenty to thirty per cent. of all deaths were

*Read before the Medical Society of the District of Columbia, March 27, 1907.

attributed to anemia in the period 1899–1904. Previous to our occupation of the island the percentage of deaths from anemia was less, it having gradually increased from thirteen in 1890 to fifteen and a-half in 1897. In 1899, the year of the great hurricane, the death rate rose abruptly and the number of deaths from anemia was disproportionate to that of previous years. In 1900 a tremendous death rate, over forty per thousand, was unfolded, about thirty per cent. of which was officially attributed to "anemia." It fell to some extent, but remained from twenty-two to twenty-seven per cent. for successive years. In other words, not only did the epidemic gain ground progressively since 1890, receiving strong impetus from the torrential rains following the hurricane which made all Porto Rico a vast culture ground for the eggs and larvae, but great poverty, exposure and a miserable food gave the finishing blow to many almost moribund in the advanced stages of the disease. There is reason to believe that heavy reinfections from the all-pervading mud after the hurricane season of 1899 were the rule, and that at this time more than one previously well-shod family were reduced to beggary and were cast out barefooted into the country where they straightway became infected.

Morbidity.—It is useless to attempt to depict the dimensions of this now epidemic disease. If it is true that the newly-arrived strangers from other countries instantly note the pasty yellow pallor so prevalent among the poorer classes of the larger towns of the island, it is equally true that it is in those very towns that anemia is least common, and that in the interior, out of the beaten path of tourists, this pallor was almost universal in 1904. Only about eight and seven-tenths per cent. of the people of Porto Rico live in towns of over 8,000 inhabitants; the great mass of the people is scattered over mountain and valley in the country districts. The majority work in coffee plantations, others in fields of sugar and tobacco, and the rest, not a large number, in gardening. A visit to any coffee plantation revealed the fact that practically all laborers in many such estates were more or less weak, pallid and ill. Many men, women and children were trying to do their full day's work with but from twenty to thirty per cent. hemoglobin, and the average reading of a long series of cases was forty-four per cent. I can not say that I observed laziness to be a predominant trait, or even a prominent one, in the Porto Rican laborer. He rises before dawn, is working by five or six, A. M., and in-

variably continues working until six. Until midday he has often nothing but a cup of coffee without sugar. Bananas and plantains are his mainstay, but generally this is reinforced by rice and beans, rarely codfish. He has no red meat. The chief reason he gave for seeking our clinics was that he could not work, and as a consequence his family was needy.

It is not an exaggeration to say that "anemia" was the most discussed subject in the island. Its great mortality was bad enough, but its tremendous effect on the industrial life of the Porto Ricans fell heavily upon them at a critical period. The coffee trees were down and the output of that staple was reduced five-sixths, without any hope of its reestablishing itself under favorable conditions for several years, and the conditions were anything but favorable, as many coffee men were hopelessly involved and could neither replant nor clean up their plantations. Tobacco was in its infancy, compared to its present splendid showing, and sugar was in the hands of a very few, whose estates were manned by negroes. All these conditions confronted the poor white, already heavily invaded by a dangerous parasite. The condition of affairs is aptly described by one of Porto Rico's talented physicians who was writing in the "Review of the Atheneum" of San Juan, a magazine published by the leading literary society of that city:

"Above all questions that today agitate public opinion in this country, one stands out of the very highest importance, which should alarm not only the Insular Government, but each and every one of my fellow-citizens ; I refer to the horrible epidemic of Uncinariasis which is depopulating and laying waste our fields.

"The day laborers and land tenants who cultivate or assist in cultivating the products of their farms are swallowed by the thousands in the treacherous sands of that terrible affliction. Those who survive, bereft of energy, their blood destroyed, their organs degenerated in the rapid strides made by this infection, can in no wise be considered men serviceable for labor, unless the protecting hand of Public Charity is stretched out toward them.

"Porto Rico is facing, therefore, the annihilation of a great part of her population, and will very shortly witness one of the most serious conflicts which can arise in the development of her agriculture."

This was written during the work of the Porto Rico Anemia Commission in 1904. The general explanation had been that the people were starving to death or were so malnourished by their poor food as to fall a prey to anemia, the supposed natural consequence of their poverty.

In press, meetings and daily intercourse the past and present were held up to contrast and the conclusions were not agreeable to the American ear, less so when labor organized and began to talk, because the facts of the anemia were not to be denied.

In 1899, immediately after the hurricane, the disease, for so it was, was found to be due to extremely severe infections by uncinaria. Nineteen cases were reported in a professional journal of this country, but the substance translated into Spanish utterly failed to convince the island of the nature of its anemia. Two years later, Dr. W. W. King and myself were thrown together in Ponce, and determined to treat one hundred of the worst cases that could be found in the largest hospital in Porto Rico, the Tricoche, using our results to prove our contention. This was done, with nearly sixty per cent. of cures in a brief time, although our mortality was eleven per cent.—not then considered high for so advanced cases.

The matter was brought to the attention of the Governor, and $5,000 was appropriated to study and treat "tropical anemia in the Island of Porto Rico." A commission, known as the Porto Rico Anemia Commission, was appointed, composed of Dr. W. W. King, Dr. Pedro Gutierrez Ygaravidez and myself. In less than six months we had treated, in half a field hospital (nine ward tents) and a dispensary for outpatients, 5,490 patients, 47.6 per cent. of whom were entirely cured when we left them, 31.4 per cent. were convalescent, and only 0.5 per cent. died.

The same commission was re-appointed the next year and an appropriation of $15,000 was made. The results were even more striking; nearly 25,000 were treated, with 84 per cent. cured and 0.3 per cent. deaths.

By this time few persons remained skeptical as to the nature of the disease. Fifty thousand dollars was cheerfully appropriated to continue the work and a permanent commission was formed, the two American members retiring to return to their service work. The third member of the original commission, Dr. Ygaravidez, became the chairman of the new commission, and from July, 1906, when they began to open their dispensaries

and hospitals, to the end of February, 1907, the date of the last report I received, they have placed over 51,000 persons under treatment. As 47,000 of these have cost but about $21,000, the rest since that time cannot have cost much more proportionately.

Thus, approximately 80,000 persons have been treated by the commission for their anemia in Porto Rico in about twenty-three months active work.

If anyone reflects on what it means to marshal 80,000 patients, all of whom have presented themselves voluntarily for treatment, there will be no difficulty in demonstrating the truth that this anemia was the uppermost question in the minds of the people of the island. Had you seen them wait in line from daybreak to midday, and longer, to see the doctor, some of them having come on foot from such distances as to have compelled them to tramp all night to reach the station, the demonstration would be more effective. Had there been more stations, more physicians in the organization of the commission, this number could just as well have been 100,000, or no one knows how many more. The trouble was to get within reach of the stricken people—we had no difficulty in getting patients.

Uncinariasis is a specific infectious disease contracted by a few minutes' contact of the healthy skin with the living "encysted" larvae of *uncinaria americana*, or, as Stiles now proposes to call it, *necator Americanus*. We are quite positive that we have never had a case of uncinariasis which had been contracted alone through infected drinking water or food. On the contrary, *mazamorra*, ground itch, or uncinarial dermatitis was admitted by at least 96 per cent. of our patients. This phenomenon has been repeatedly explained by experiments to be due to the invasion of the economy by the larvae through the skin and, if infection *per oram* takes place, it is a rarity, or such a negligible number reach the intestine as to completely eliminate this route as an important or even efficient mode of contracting uncinariasis.

The worms, with their heads buried in the jejunum, consume the epithelial cells of the mucous membrane; this is their usual food, and if any blood is swallowed this is because they are attached to so vascular a feeding ground. I submit some photographs which will demonstrate the normal food of Necator Americanus. We have treated of this matter in a separate article, which was read before the Medical Library Society of Boston.

The females lay about 6,000 eggs each *per diem*. These eggs are uniformly mixed with the feces, and the habits of laboring people the world over account for the fact that the surface of the earth is contaminated. The ova need dampness and an equable warmth, such as is a constant feature of the tropics, to permit them to mature. There are other less important conditions favoring the development of the larva. In from four to six days the parasite has reached the stage of encystation, the infective stage, and from this time the larva ceases to develop further until it reaches the host. At the time of encystation, or second ecdysis, as it should more correctly be termed, the worm is about one-half a millimeter long by three-hundredths mm. in diameter. The facts that the egg never developes in the intestine of the host and that the larvae never attain sexual maturity outside of the body, account for some of the most remarkable and successful methods employed to combat the disease.

On entering the skin it may or may not produce external evidence of its invasion by a peculiar dermatitis. This dermatitis occurs in the vast majority of cases of infection, but we have seen that invasion may take place without the slightest sign of a lesion in the guinea pig experimentally infected by us, and have reason, from a number of cases, to believe that the same exception holds good for man.

It seems probable that the animal reaches the lung through the venous system by way of the right heart and pulmonary artery to invade the alveoli on reaching its finer and impassable divisions. From this point its course has been, according to the best observers, by way of bronchi, trachea, esophagus and stomach, to finally take up its abode in the jejunum, sometimes the stomach or duodenum. This is a strange course, but we are convinced that it is the usual one, as far as the lung, at any rate.

The fully developed worm is best described as to size by exhibiting some which I have brought with me from a collection of nearly one hundred thousand counted in the stools and preserved in four per cent. formalin solution. In Porto Rico the coffee grove is especially favorable to infection, not only by reason of the ideal conditions of shade, moisture and warmth (and, perhaps, on account of the grumous mud rich in disintegrated banana stalks and leaves), but also because here the people group to work, barefooted.

Epidemics of uncinariasis are apt to occur where the ova are sown in localities worked over by closely aggregated laborers whose bare skin is exposed to contact with the mud.

The Island of Porto Rico has not only a dense population, with an average of 262 persons per square mile, but this well-distributed population swarms into the coffee groves at coffee-picking time. Practically all are barefooted, and all defecate just as English, German and French miners do; that is, where they please. The result is, little nests of larvae spring into being here, there and the other place, just as they happen to fall, as it were. These swarms of people are working in bushes, and the bush is a popular substitute for a sink, especially where there is no sink. At any rate, nests are multiplied, day by day, until one cannot walk through a plantation in bare feet without stepping, all unconsciously, into a spot from which all traces of fecal matter have disappeared but which is teeming with living, almost microscopic worms. As the swarms of laborers are thickest in the coffee estate, we see why it is that a laborer on a large open tobacco or sugar plantation will not have suffered as much from mazamorra. They do not stay as long in one restricted locality as coffee pickers do, the ground is not nearly so wet, and even tends to be dry (which is fatal to the larvae), save in the irrigating ditches; and, above all, Porto Rican working men are naturally delicate about defecating in public. They seek the brush.

The result is that although not by any means confined to coffee districts, the disease there is worst, and a coffee picker will date his illness from the time of coffee harvest, when he always had mazamorra, and sometimes so severely as to incapacitate him from all labor.

Uncinariasis is a clinical entity. A well-taken history, with a record of occupation, ground itch, gradually developing symptoms, among which anemia is a prominent one, and the fact that others living under the same conditions in the neighborhood of the patient have like symptoms, make a very suggestive picture. The finding of the typical ova in the stools of such persons completes the diagnosis.

Lack of space forbids a consideration of the symptomatology, but suffice it to say that we divided our cases into very light, light, moderate, severe and very severe forms. Two-thirds of

our cases in 1906 up to December (18,865) were moderate, severe or very severe, and it should be noted that our moderate case would be a severe case in other countries in which work on uncinariasis is being done. The moderate case is the usual type seen in Porto Rico. The pallor is definite, the skin dry, and sweating is rare; appetite may be increased to the point of bulimia or, rarely, perverted to geophagy; there is apt to be some tenderness of the abdomen with spontaneous pain and heaviness; breathlessness is easily elicited, palpitation of the heart is severe and not always relative to exertion; the pulse is rapid, weak and compressible; there is generally a cardiac murmur which is hemic in character; pain in the chest is a very prominent symptom, not infrequently accompanied by joint pains; there is weakness of the knees and legs, and the patient complains of general debility; there is much dizziness, especially on sudden changes in position, *tinnitus aurium* and headache.

The mental condition is decidedly depressed, and the patient is quite passive to his surroundings and may appear stupid. There is a marked tendency to extinction of the patellar reflex and to paresthesias. There is apt to be albumin in the urine with hyaline, finely granular and fatty casts. The hemoglobin lies between 30 and 60 per cent.

A very severe case is best described by the following history, which is typical: Case 3,206, age 23, male. Almost moribund from long-standing uncinariasis, when admitted. There are hypostatic congestion of the lungs, general severe anasarca and death-like pallor. All above symptoms descriptive of a moderate case, exaggerated. There is only 8 per cent. hemoglobin, Dare instrument. Temperature 38.5 C. Trace of albumen with hyaline and granular casts. Temperature ranges from subnormal in the morning to 37.5 to 38 C. at night. Sputum contains no tubercle bacilli. The man is completely prostrated and cannot speak above a whisper; apparently is not at all emaciated.

He was given six doses of two grams each of betanaphthol, one dose each week; after five doses his hemoglobin had risen to 85 per cent., and after the last dose it reached 105 per cent. He became one of the most active of our cured cases, and was employed by the town pharmacist because he developed into such an unusually bright lad. On admission he was apparently so stupid as not to understand the simplest things said to him. He

expelled under the treatment cited above 2,234 uncinariae, 2,007 of which were evacuated as a result of the first dose.

The Methods by which the Porto Rico Anemia Commission has endeavored to combat the present epidemic of Uncinariasis.—With the essential facts of uncinariasis before us the Medical Society will comprehend the reasons for the working plan of the commission. The means of prophylaxis adopted, in the order of their importance, were :

1. The treatment of those infected.

2. The personal enlightenment of the country laborer or "jibaro" and his family as to the nature of the disease from which he was suffering, emphasizing the danger from not wearing shoes and from indiscriminate surface pollution.

3. The maintenance of a corps of inspectors who reenforced in the laborer's home the teaching given at the station.

4. Campaigns of press and lay societies.

5. Instruction of school children in all public schools in the simple means by which the disease could be avoided.

6. Publication of little pamphlets seeking the cooperation of planters and public officials, on the one hand, and the distribution of little tracts written in the simplest language for the laboring man, on the other.

1. *The treatment of the infected.*—There is no doubt whatsoever that the backbone of any work undertaken with the idea of controlling, reducing and finally eliminating uncinariasis in Porto Rico is the expulsion of uncinariae from the intestinal canal of those harboring them. We are still dealing with from 600,000 to 700,000 persons infected. Apart from the 80,000 treated thus far by the commission no one knows how many thousands more are being rendered innocuous to their neighbors, or, at least, relatively so, by the physicians of the island in general, very few of whom fail to systematically apply the specific remedies to their anemic patients.

In an interesting series of seventy cases, kept in our field hospital in Aibonito, the total number of worms expelled in the twenty-four hours following the specific medication was counted, after washing the feces on a gauze filter and laying the residue on a black background. This was done in each case at each repetition of the anthelmintic and the total number expelled was added. At every count of worms each worm was picked up,

identified and placed in formalin. We found that 76.85 per cent. of the worms harbored are expelled by the first dose, and that four doses eliminated 96.57 per cent. That is to say, a man is cured of his *disease* in less than five doses (usually) and is ¾ to 19/20 less dangerous to the community than he was before, according to whether he has taken one or five doses of the anthelmintic. Thus, the infection nests are fewer, farther apart, and far less heavily stocked with larvae, none of which can reproduce its kind. All of this time new ideas on the disease are received by the country people from the stations or country dispensaries right in their midst, and what is not learned there the inspector carries to their homes.

2. *The education of the "jibaro" on the prevention of uncinariasis.* —Two cardinal principles are involved: *a*. The general use of sinks, at least, in the place of indiscriminate soil pollution. *b*. The use of shoes to protect the feet against invasion. We have always felt that in order to overturn incorrect notions of the cause of the disease throughout the island it was necessary to begin by convincing the sick man. It is hardly within the bounds of reason that chronic invalids with the demonstration of an effective cure staring them in the face will fail to take advantage of it. At our dispensaries all mysticism was laid aside. We took them completely into our confidence. From the very moment an applicant entered the station his education on uncinariasis began. He was told that innumerable little worms living in his intestine were destroying his blood and were responsible for his poor health.

At first, he may have laughed. These little talks took place in the large clinic room, where perhaps fifty were waiting, each with his little box of feces, for one of the physicians at the microscope to verify the diagnosis or determine, from the presence or absence of ova, after one or more doses, the necessity for further treatment. As many of those in the room had been there before, when we exhibited the "little worms" in proof of our statement and advised the newcomer to look in his diarrheal stool after taking the medicine we were going to give him, where he would find similar ones, a murmur of approval and confirmation of our prophesy was heard on all sides from those who had done this very thing and who had been duly impressed thereby.

We then asked if any one present had ever noticed that barefooted people formed the great mass of sick anemics in Porto

Rico. This elicited a decided affirmative. The next question was, "Have you noticed that people are apt to fall quite sick after having suffered much from mazamorra?" Generally the answer was that every year, after the coffee crop had been picked, during which they had been tormented by mazamorra, they fell sick of anemia.

On the basis of these questions and answers the little audience was shown how these worms, like all other living creatures, have progeny, and that in this case each female laid hundreds of eggs a day in the intestine of man. They were told that the eggs, not being able to get enough air to hatch in the bowel, needed to be strewn over the earth like seeds before they would grow into other worms; that while still very small they attacked the feet of all who did not wear shoes, caused the familiar mazamorra, and eventually reached the intestine, where they began again to dissolve blood and set up anemia.

When one has been able to see for himself the interest shown by these untaught, yet shrewd, country people in a subject that was so near their hearts, then only will the value of the country dispensary be appreciated.

Everything was open to them; they wandered into the little clinical laboratory; they were shown the rise in their hemoglobin and the large numbers of uncinariae expelled after the anthelmintic in the cases under study in the field hospital just at hand. But there was a conspicuous absence of obnoxious familiarity with the "Doctor"; a complete absence of sneering jest at bugologists. They were not in a mood to criticise; they had too much at stake in this new treatment of anemia; it was giving results. Some especially bright patients under treatment in the hospital, after convalescing from their severe anemia, helped us in caring for instruments, nursed other patients, and were very useful in explaining the means of prevention against infection to the large morning clinic. In fact, they were all the assistants we had save a pharmacist, and were the best we could have had because they themselves were "jibaros," and as a consequence their work among their own people was infinitely more effective. Thus one can get into direct touch with the situation, and in no other way.

3. *The maintenance of a corps of inspectors.*—The extent of the good such a station can do can be and now is much increased by having one or two inspectors, preferably intelligent ex-patients,

who will personally visit all dwellings, spread throughout the district the means of self-preservation against the affection, induce those needing treatment to come to the station, transport the bedridden to the hospital at the expense of the commission, and report those homes that are without sinks. In the latter contingency only should the law interfere. There is not so much need now for a law prohibiting soil pollution as there is for a personal and vigorous campaign of education; but a deliberate offender should be punished for the common good.

I have described the working plan of the Aibonito Central Station, the commission's headquarters, but it was the same for all our substations and is today the working plan, with a few modifications, of the present commission. The effect of this campaign was excellent both as to soil pollution and the wearing of shoes. Not only were sinks built in many homes but our counsel, that while working in the coffee one place for defecation should be defined and used by each group of laborers, was beginning to take root. Shoes began to appear, and our relations with the shoe store were those of the only doctor in the town with the pharmacist.

4. *Campaign of press and lay societies.*—Both are important allies. The cooperation of the press was valuable in urging the continuance of the work and in aiding the formation of the league against uncinariasis. In considering this question we must remember that uncinariasis is not merely a medical matter but a social and economic one. Some very able and patriotic appeals were made for assistance of a moral sort in the campaign, but it was to stamp out uncinariasis that they were written, not "the lazy disease."

5. *Instruction in schools on uncinariasis.*—It has been proposed to have regular instruction of this kind given, and with this end in view a day was set apart in April of this year for a general assembly of school teachers for each district, at which physicians named by the Medical Association of Porto Rico lectured upon the subject. These assemblies were held and will pave the way for the full realization of the hopes of the association that this feature of the work be given due prominence. They were certainly a valuable means of arousing enthusiasm among the classes in the towns who run no risk of contracting the disease: the well-shod and well-to-do, many of whom own plantations.

6. *Publications.*—Direct contact with the sick is the ideal method of conducting a campaign against an epidemic, and no amount of literature can take its place, especially in a country where the illiteracy of the poor is so great. Thus not only is it seen that printed matter never has the force of direct address, but more than half of these unfortunates cannot read. As a matter of fact, something in this line can be done, as some one is sure to be able to read, and all literature has a great fascination for the average "jibaro." It stimulates his curiosity, lends importance to the subject from the fact that it is printed, and the ultimate result is often that the pamphlet is read aloud to a group of country people at their own request.

The effect of printed matter upon the plantation owners is distinctly good, although too much can not be expected of it. They are told that not only their children are from time to time exposed to infection from the careless habits of their help, but that the output of the plantation and their own income is greatly enhanced by driving out the disease and reducing the number of indigent sick whom they are in honor bound to succor. But when their help are actually in the hands of the station physician and the marvelous improvement in each man is made manifest, not alone by a good color and increased weight but by the palpable betterment in the amount of work accomplished, these planters become the most enthusiastic supporters of the reforms in sanitation and customs which affect the epidemic. A notable example of this will be found in the Porto Rican-American Tobacco Company, employing about three thousand laborers at one time in the field and at another in the factory. Their fields occupied the famous Barrio Plata, a superb tobacco valley, but many of their workers were sick. As this barrio was near our station, we reached many of them, and practically all the really very sick persons. The actual returns to the company were such that they themselves could not afford to let the station go, and have assisted it this year by paying the salary of its chief physician.

The general education of the people of the towns concerning the means of combating "anemia" is extremely important and really should not have been left to the last of the list. It results in stimulating town officials to throw off the fearful bondage under which the towns and hamlets of the island have been groaning so long—

the care of and the responsibility for the great multitude of chronic invalids, the more or less complete break down of whatever system of medical aid to the poor they had, and the actual lack of money with which to continue to bolster up with so-called tonics an ever-failing patient. From every part of the island the commission has been besieged by these towns for a station, and many were established under conditions whereby the municipality freely and cheerfully provided physician and building for a station, provided that the service should be managed by that body. It was in this way, first by the local jibaro spokesman, then by the planter, then by the municipality, that the delegate became aware of the necessity for continuing the work, and no oratory nor cajoling was needful to pass ever increasing bills for the sustenance of a campaign which has truly been fostered and brought to a successful issue by the people of Porto Rico themselves, through the strong support of the Governor, the services at home on the continent, and the patriotic attitude of the Legislature, which has stood ready to make all due sacrifice, that the redemption of the health of the laboring man in the country districts might be consummated.

Dr. Stiles said that the work just described by Dr. Ashford was one of the grandest public-health works ever undertaken or ever carried out. It is difficult to conceive of the pitiable condition of these anemia patients until they are actually seen; and it is difficult to understand the enormous economic difficulties of a country infested with hookworm disease, until the condition of its inhabitants is appreciated. Dr. Ashford had been very conservative and moderate in all of his statements.

As to the primary infection through the skin, Dr. Stiles had recently received a series of histological slides plainly showing the pathological sequence of events in the production of infection by this mode. These slides had been sent from Cairo, Egypt. At first sight the idea seems absurd; the theory was advanced many years ago and then was rejected, but it has now come into its own, with ample proof to sustain it. Experiments are being made to determine how many worms need to penetrate the skin to induce intestinal infection. In this work, forms of uncinaria allied to the Porto Rican variety are for the most part being used. Study of the subject has brought us almost to the point where we may reject the possibility of mouth infection.

As to treatment, Dr. Ashford has pointed out the importance of treating cases that exist as well as preventing the development of new cases. It must be added that light cases, also, should not be ignored; it is just this class of patients who may carry the

disease over from year to year. As to prevention, many methods have been suggested. It was at first attempted, by public instruction, to induce the people to boil and filter the water; but it has been found that the farmers will not do it, and influence is lost in urging it. As the concentrated infective material is the feces, the question may be narrowed down to one procedure: dispose of the feces properly, and the whole situation is taken care of. If this be done, the wearing of shoes need not be insisted upon, and boiling or filtering the water, so far as uncinariasis is concerned, may be dispensed with.

Dr. Ashford may have shocked some in his audience by speaking of the money side, the commercial aspect, of the question in securing the cooperation of the coffee planters. But it is one of the best ways to appeal to the planters; when it can be proved to them that laborers suffering from anemia are able to give only from 40 per cent. to 60 per cent. of labor for 100 per cent. of wages, the economic expediency of exterminating the disease is quickly realized. Moreover, it may be seen that the prevalence of the disease must reduce land values.

We have heard and approved of the superb work in Porto Rico, but what of the situation in the United States? Plenty of uncinariasis may be found from the Potomac River to Florida; Dr. Stiles has learned from a correspondent that 20 per cent. of the rural population of Florida are infected and nothing is being done to correct the condition. He believed that the unfortunate type of population in the South, known as "po' white trash" is the direct product of hook-worm disease.

In his opinion the child-labor agitation with respect to the cotton mills of the South should more properly be directed against uncinariasis. The negroes cannot be employed in the mills, and therefore the laborers must be recruited from the poor whites, among whom hook-worm anemia is prevalent. The managers of these mills are depicted as brutes for working these children into anemia and stunted growth; the cotton-mill child of the South owes his condition to uncinariasis; his anemia is not due to the mills, but on the other hand he will get well in the mills because removed from infection on the farms. It is unfair to compare the cotton-mill child of the South with the Northern child; he should be compared with the farm children in the poor districts of the South, and the cotton-mill child will have the better of the comparison.

That the high death rate among the prisoners at Andersonville during the Civil War was due to hook-worm disease is the interesting and perhaps probable explanation recently advanced by a naval surgeon.

Dr. Stiles believed that he expressed the sentiment of every member of the Society when he said we are all proud that a Washington man heads this superb work in Porto Rico.

Dr. Pryor asked Dr. Stiles if he had noticed any connection between the introduction of slavery into America and the origin of uncinariasis? It is recognized that the same type of uncinaria may be found in Africa and in this country.

Dr. Stiles said that there are two distinct hook-worms found here, both of which are found in Africa. As the African pygmies could not have been infected by Indians, the African origin of the disease seems reasonable. A fact to be considered, however, is that there has been described a disease among very isolated peoples in the United States and in Mexico which appears to be uncinariasis. These tribes have only recently come into contact with negroes. The evidence thus far is in favor of the African origin of uncinariasis.

Dr. D. S. Lamb inquired as to the method of disposal of the excreta at the hospitals.

Dr. Claytor said that he had been among the first five or six American physicians to report a case of uncinariasis. In 1901, a boy, 19 years of age, came to Garfield Hospital from Westmoreland County, Va.; he looked to be 14 years old, his voice was childish and his genitals infantile. Hook-worm ova were found in the stools. The disease had existed so long in this case that cerebral softening had taken place, and the boy died from rupture of a blood vessel. Since then Dr. Claytor has had a second case, also from Westmoreland County. Dr. Bagby, of Virginia, has reported a large number of cases. He was glad to hear Dr. Ashford's paper; it was due to his original communication on 19 cases of uncinariasis that Dr. Claytor's attention had been drawn to the true condition in the two cases mentioned.

Dr. I. S. Stone said that he was glad Dr. Bagby's name and work had been mentioned. He is a young country practitioner, suffering from tuberculosis, but has done much good work in the study of uncinariasis in Virginia. His reports of this work before the Virginia Medical Society have been received with great interest.

Dr. A. F. A. King asked how betanaphthol was administered in hook-worm disease.

Dr. Borden said he desired to emphasize the importance of Dr. Ashford's work; he had recognized and demonstrated the etiological relation of hook-worm to anemia, and his activities in the study and prevention of uncinariasis have been equalled in importance only by Reed's study of yellow fever in Cuba. For the army, he could say that the medical corps is proud of it.

Dr. Fremont-Smith said he was reminded by Dr. Claytor's case with cerebral softening and rupture of blood-vessel of a similar case he had seen in Florida. Dr. Ashford had spoken of vascular degeneration in uncinariasis. What is the effect of the malnutrition of hook-worm anemia upon the walls of the vessels? Nests of degenerative change may be found in the intima after acute infections, mushroom poisoning, etc.; it would be interesting to

determine whether uncinariasis may be added as a cause of focal degeneration and arteriosclerosis in children.

Dr. Ashford said that in mild cases as well as in the severe ones, the endeavor is to treat with betanaphthol or thymol until all larvae disappear from the stools; this is difficult to accomplish. As to disposal of feces at the hospitals, a camp latrine is used, lined with cement; the feces are received in a large can, which is removed every night and the contents buried, deeply, mixed with lime.

As to drugs, no results have been obtained from male fern at all comparable to those obtained from thymol and betanaphthol. The thymol is given powdered, in capsules; the night before a treatment, the patient is given a purgative dose of sodium sulphate; in the morning no food except a cup of coffee or milk; then 2 grs. of thymol; in five hours another 2 grs. thymol; in two hours more another dose of salts, to remove the irritating drug. The use of betanaphthol has been abandoned, as it may produce nephritis. In Porto Rico thymol is used exclusively.

As to degenerative changes in vessels, sclerotic signs are frequently found and cataract is frequent among children in Porto Rico. He is at present studying degenerative changes in the vessels of organs. There may be seen fatty changes in the liver and kidneys.

In the name of the commission, he thanked the speakers for their kind remarks.

CASE OF ANEURISM OF ARCH OF AORTA, RUPTURING EXTERNALLY THROUGH AN ABSCESS. PERSISTENT LEFT SUPERIOR VENA CAVA.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

The specimen consists of the heart, arch of aorta, &c. The heart, larynx, trachea and oesophagus are normal. The arch of the aorta shows, just to the right of the origin of the innominate artery, a depression partly filled with firm bleached clot, doubtless an aneurismal pouch, nearly healed. To the left of the origin of the left subclavian artery is a large aneurismal sac, nearly filled with laminated clot; the distal wall of the sac is ragged where it ruptured. It ruptured into an abscess cavity of the neck, and the hemorrhage found an external exit through the opening of the abscess. The aneurism has caused much distor-

* Reported, with specimen, to the Medical Society, May 15, 1907.

tion of the organs of the neck and thorax. An interesting feature of the specimen is a persistent left superior vena cava.

The patient, a colored woman, age 41, was admitted to hospital May 3, 1907, and died of the hemorrhage May 5, two days after admission. The clinical history is imperfect. Her parents were dead, but the cause of death is unknown. She had had nine children, all of them dead, but the causes not ascertained. She had had the usual diseases of childhood and also pneumonia. About one year before admission she had an enlargement of the glands of the neck, just above the sternum; these suppurated and discharged, April 10, 1907. It was for the suppurating glands that she was admitted to hospital, where, however, a diagnosis of aneurism was also made.

In addition to the specimen, the post mortem examination showed adhesions of each lung, general on the left side; the lungs were also much pigmented and contained many calcareous tubercles. The abdominal organs were normal except that the spleen was small and the uterus and appendages also much atrophied.

To me the points of interest in the case are, 1st, the somewhat unusual manner of rupture of the aneurism; 2d, the fact of two aneurisms, one of which had progressed well towards a cure; 3d, the marked distortion of the organs throwing the vessels especially out of their usual position, and, 4th, the persistent left superior vena cava.

In view of the infrequency of the latter it may be added that the explanation is that the left subclavian and internal jugular veins form a trunk that, instead of emptying, as usual, into the right vena cava, courses vertically downward over the arch of the aorta in front of the root of the left lung to open into the coronary sinus of the heart. This condition is that of the early part of fetal life and is also the normal adult condition in birds and some mammals. Usually in man the vein becomes functionless and atrophies to a cord, except that its terminal part remains as the oblique vein of Marshall and the coronary sinus.

Dr. J. D. Thomas said that an interesting feature of the specimen was the evident healing of one small aneurismal pouch. This was evidence of what is possible in these cases; but the specimen also illustrated the fact that after healing of an aneurism the tendency still remains for vascular pouching to occur, for other aneurisms to develop and prove fatal.

HYDROCEPHALUS.*

By I. W. BLACKBURN, M. D.,

Pathologist to Government Hospital for the Insane,

Washington, D. C.

Hydrocephalus, or water on the brain, as it is commonly called, is commonly divided into two classes, viz : *external*, when it consists of accumulation on the outside of the brain, and *internal*, when the accumulation is within the ventricular cavities. Either of these forms may be *acute* or *chronic; primary* or *secondary;* and *congenital* or *acquired*. Writers differ somewhat in their classification of the different varieties, but by remembering that the terms, primary and secondary, are merely expressions of our inability to always ascribe a cause, and that the terms, congenital and acquired, are probably the same thing, artificially separated, the classification may be much simplified.

ACUTE HYDROCEPHALUS.

Acute hydrocephalus, both external and internal, is due to infections or inflammation. In some cases the inflammatory affection is limited more or less to the external lepto-meninges; in some instances the disease extends to the intraventricular pial processes and the ependyma, when an acute internal hydrocephalus occurs. Again, there are cases in which the primary seat of the disease is within the ventricles, the lepto-meninges being apparently healthy. This, though it is probably inflammatory, is, I think, the form mentioned by Osler as the idiopathic form, or "angio-neurotic" form of acute internal hydrocephalus, and may be considered as analogous to the primary form of acute effusions into the pleura or synovial membranes. This condition may become chronic, in which case the ependyma may show some chronic thickening or granulations. The symptoms in this acute form simulate those of acute meningitis; in the chronic form they more resemble those of *tumor*.

The *acute external form*, being practically synonymous with the various forms of meningitis, need not now occupy our attention. Both external and internal forms may be either simple or specific, the best examples being the so-called serous meningitis and tuberculous meningitis.

*Read before the Medical Society of the District of Columbia, April 10, 1907.

CHRONIC HYDROCEPHALUS.

Chronic hydrocephalus.—This variety may be either *external* or *internal*. The external form is usually *oedema ex vacuo*, and occurs where there is atrophy of the brain, the fluid taking the place of the loss of brain substance, the accumulation being in the pial meshes. There is also a form in which the fluid accumulates in the *subdural* or *intra*-arachnoid cavity and compresses the brain ; sometimes, when *congenital*, expanding the skull. If the child be born alive the head may rapidly increase in size and may present the same shape as in congenital hydrocephalus. The cause of this rare condition is unknown, and the post mortem appearances offer no clue to its nature. It is sometimes localized, and compression of the brain and enlargement of the skull may also be circumscribed. I have met with only one case of this variety in an adult, which I have brought before you this evening. I would incline to limit the term true external hydrocephalus to this form, making it analogous to simple effusions in other serous cavities.

Chronic Internal Hydrocephalus.—This form is usually divided into the *congenital* and the *acquired* forms. *Chronic acquired internal hydrocephalus* is distinguished from the *congenital* form by the fact that it may be traced to mechanical causes, to meningitis, or be apparently of idiopathic origin, and that it is a condition supervening after the brain has been at one time normal. It is probably in some cases an ependymitis indicated by changes in the ependyma, in others mechanical, and sometimes it may be traced to meningitis, in which case it is a secondary form, but dependent upon the *effects* of the meningitis rather than upon direct extension of the inflammation. It is sometimes not traceable to any direct cause, and the only morbid condition which may be discerned is a slight trace of ependymal inflammation. In these cases there may be no expansion of the skull, though the ventricles may be greatly dilated ; in some cases occurring early in life the skull may be expanded and the sutures separated, though rarely to the same extent as in the congenital form.

A form of acquired hydrocephalus frequently associated with atrophy of the brain and properly called *hydrocephalus ex vacuo* is very common in cases of *senile insanity* and in *advanced atrophy* of the brain. It seems in most instances to be closely connected with the external shrinkage of the brain, and it is probable that

the majority of cases are due to atrophy of the brain substance. In some cases the ventricular veins are dilated and the choroid plexuses are cystic, but commonly there are no signs of inflammation nor mechanical obstruction. Being correlative with the mental disease the condition does not produce any distinct symptoms. In many of these cases it is a question whether some dilatation of the ventricles has not existed as a congenital condition, as not infrequently the ventricular enlargement is out of proportion to the surface atrophy and in some cases there is slight enlargement of the skull. In these cases there has probably been an arrest of the disease and the individual has developed average brain power. In the two cases shown by photographs [Nos. 714, 1,628], the persons had at one time presumably normal intellects, as one was a marine and one a soldier.

CONGENITAL INTERNAL HYDROCEPHALUS.

Congenital internal hydrocephalus may develop *in utero*, and the head be so large at birth as to cause dystocia, or it may rapidly increase in size after birth, sometimes at the rate of two or three centimeters in as many weeks. The normal circumference of a child's head at birth is about 40 centimeters, while the head of a hydrocephalic child may measure 60 to 80 centimeters. From this size we have cases recorded of heads of hydrocephalic persons, at various ages, measuring 109 cm. (43 inches), 107.6 cm. (42 inches), and 91.5 cm. (36 inches), etc. Usually the frontal bones and the parietals show the greatest enlargement. Sometimes the height of the head is greatly increased, but more commonly the vertex is somewhat flattened. The bones of the skull are thin, in some cases even translucent; the fontanelles are widely separated and later on may be filled in with Wormian bones. The forehead is globular, overhangs the face; the orbital plates are depressed, giving a downward look to the eyes, and there is exophthalmus, and the lids at times cannot be fully closed. The face is relatively small; the brows elevated; hair scanty; scalp thin, and prominent veins are seen coursing under the transparent skin.

In case the patient lives long enough the teeth are frequently defective; if a male, the beard is scanty. The patient is often unable to walk, and the head is too large and heavy to be sup-

ported by the neck. Not infrequently there are spinal deformities and weakness and contractures of the limbs, with paresis.

There is usually marked mental defect ; convulsions ; there may be blindness from optic nerve atrophy ; nystagmus and strabismus. Convulsions and febrile attacks are frequent, and death usually occurs in the second or third month from marasmus, convulsions or coma. A few patients reach the 5th year, and rarely a case of moderate hydrocephalus may reach the age of 29, 38, 50 and 60 years.

Etiology and Pathology.—The disease is obscure in its etiology and in the underlying pathological conditions. Alcoholism of the parents is usually mentioned as a causative factor ; so also has the universal "scape-goat" syphilis, but neither has been supported by proof. Pathologically the disease has been supposed to be due to some inflammation disorder occurring either before or sometime after birth, but this, too, rests on assumption. It has been observed to occur in several members of the same family, so that we may assume some hereditary tendency.

Post Mortem Appearances.—The skull is usually thin ; rarely symmetrical ; the sutures in recent cases separated ; in cases of long standing they may be closed and Wormian bones are found at the fontanelles. The dura mater is usually adherent to the bone ; the falx is relatively small.

The pia mater is thin and usually so compressed against the dura that there is but little subarachnoid fluid. The veins and arteries are much stretched and thin ; there is usually no disease of the pia mater apparent at the autopsy. The convolutions and fissures are more or less effaced according to the degree of distension. Occasionally one hemisphere is more dilated than the other. The lateral ventricles are usually the ones dilated, but sometimes the third, the aqueduct, the fourth ventricle, and even the central canal of the spinal cord are enlarged. Rarely one ventricle alone is dilated, and this may be the fourth, though commonly this ventricle is unaffected.

The brain mantle may in places be reduced to .5 of a centimeter in thickness or even less ; the callosum is thinned and stretched ; the basal ganglia are flattened and small ; the septum pellucidum and fifth ventricle may be so atrophied as to be indistinguishable ; the fornix is stretched and distorted.

The ventricular veins are often not prominent and the choroid

plexuses are pale and atrophied. The ependyma may be smooth or it may be nodular or granulated ; sometimes shreds of apparently atrophic remnants of brain substance line the ventricular cavities. Section of the basal nuclei and the brain mantle usually shows the differentiation between white and gray substances, and in cases not too extreme the anatomical features may, of course, be made out.

The fluid contained within the ventricles is usually clear and has a specific gravity of 1001 to 1009 ; it contains some albumen, chloride of sodium, sometimes urea, cholesterin, and other substances. The quantity is sometimes enormous, depending upon the degree of dilatation ; as much as 27 pounds (about 12.2 liters), to 15 quarts have been removed. (Gowers, and Am. Text Book of Pathology.)

I have introduced a few cases illustrating some of these forms of hydrocephalus, and have given somewhat at length the report of one case of congenital hydrocephalus which possesses some local interest and some unusual features which I have deemed worthy of report.

Circumscribed Chronic Acquired Internal Hydrocephalus.—Case No. 606.—J. G., aged 52, white, male, soldier ; nativity, Ireland. Mental disease, chronic epileptic mania, duration 25½ years.

The history shows mental defect, convulsions and contractures of the flexors of the left forearm.

Cranium of the usual size, but of peculiar shape, the forehead being markedly receding. Bone in frontal region nearly 1.5 centimeters in thickness ; sutures obliterated in the inner table. Dura mater adherent and a trace of neo-membrane over right inner surface.

Brain.—Weight of left half 21½ ounces (610 grams), the right half 13 ounces (368.5 grams). The right hemisphere was occupied by a large cyst-like accumulation of clear fluid measuring together with the contents of the ventricles 13 fluidounces (385 cc.). The dilatation involved nearly all of the parietal, temporal and occipital lobes ; and the brain substance over this region was very thin. The cavity communicated with the ventricle by a large opening in the posterior portion ; the inner wall of the cavity was covered by shreds of atrophied brain tissue, and the course of some of the principal fissures could be seen. The brain exter-

nally showed some flattening of the convolutions over both sides, though the ventricles of the left side were only moderately dilated. The brain tissue was soft, cortex rather dark, a few small softenings in the caudate nuclei, and slight arteriosclerosis. The fornix, septum pellucidum and other internal parts of the brain seemed normal.

The case was one of those rare forms of circumscribed hydrocephalus without any definite indication of its etiology. The few recorded symptoms were doubtless due to the cerebral conditions.

Chronic Acquired Internal Hydrocephalus.—Case 714.—J. P. M.; aged 60, male, white, marine; nativity, Ireland. Mental disease, chronic dementia. Duration 7 years.

Skull very thin; antero-posterior diameter, 8¼ inches (21.5 centimeters); transverse, 6¼ inches (16 centimeters). Shape symmetrical; sutures all distinct; no Wormian bones. Dura normal. Brain weighed 47½ ounces (1336 grams). The ventricles contained 19½ fluidounces of fluid (577 cc.), and were greatly dilated; septum pellucidum thinned and almost destroyed; fornix thinned and the foramina of Monro enlarged; corpus callosum very thin; anterior white commissure exposed for about 1 cm.; third ventricle was dilated, and the *massa intermedia* had disappeared. The velum interpositum was thickened and the ependyma seemed slightly thickened. Several small arteriosclerotic softenings in the caudate nuclei. The convolutions and fissures showed some of the effects of pressure. Fig. 1.

Chronic Acquired Internal Hydrocephalus.—Case 1502.—J. H.; aged 67, male, white, soldier; nativity, Germany. Mental disease, chronic dementia. The patient was confined to bed; had contractures of the limbs; advanced dementia; had elevation of temperature for one month before death. Cause assigned, syphilis and intemperance.

Skull normal in size. Dura normal. Weight of brain 1140 grams. Ventricles dilated; callosum thinned; third and fourth ventricles slightly enlarged. Intraventricular veins prominent; veins of Galen dilated. Some atrophy of the exterior of the brain over the fronto-parietal convexity; veins engorged.

The cause of the condition seemed to be some obstruction to the return of the blood from the ventricular veins, but its nature was not apparent.

Fig. 1.—Case 714.

CHRONIC DEMENTIA; CHRONIC ACQUIRED INTERNAL HYDROCEPHALUS.

Weight of brain 1336 grams; ventricles contained 577 cc. of fluid. No cause discovered except some thickening of velum interpositum and ependyma. Veins of ventricles rather prominent.

Figs. 2 to 5.—Case 2187.

CONGENITAL INTERNAL HYDROCEPHALUS.

Fig. 2.—Under surface of brain; shows relative size of cerebrum and cerebellum, and extent to which the former overhangs the latter.
Fig. 3.—Upper surface of cerebrum.
Fig. 4.—View of dilated ventricles from above.
Fig. 5.—Upper part of cerebrum; view of ventricles from below.

Chronic Acquired Internal Hydrocephalus.—Case 1628.—E. V. C., aged 59, male, white, soldier; nativity, U. S. Mental disease, senile dementia (?).

The skull was thin; frontal suture persistent; artero-posterior diameter 7¾ inches (19.5 centimeters); transverse, 6¼ inches (16 centimeters). The brain weighed when emptied 1,560 grams, the ventricles contained about 340 cc. of fluid. Convolutions not appreciably flattened; arteries normal. The ventricles were much dilated; callosum thinned; anterior white commissure exposed for about 2 centimeters of its length; *massa intermedia* gone; fornix and septum pellucidum thinned and atrophied. The basal ganglia were flattened, and the third ventricle was dilated and the tuber cinereum bulged downward.

No cause whatever was discovered to explain the condition; it was probably congenital and the process had been arrested.

Chronic Acquired Hydrocephalus ex vacuo.—Case 1900.—F. T., aged 79, white, male, varnisher; nativity, Germany. Mental disease, senile dementia.

Skull thin; asymmetrical; dura adherent to bone. Brain: Weight, 1,150 grams. Organ much atrophied; a large accumulation of pial fluid over the fronto-parietal convexity; ventricles dilated; arteries sclerotic.

This seemed to be merely a case of external as well as internal hydrocephalus *ex vacuo*. Nothing was found to account for it but the cerebral atrophy.

Chronic Acquired External Hydrocephalus.—Case 1946.—L. A., age 56, female, colored; nativity, D. C. Mental disease, organic dementia; duration uncertain. The patient had choreiform movements of the extremities, becoming more marked during the last six months of life. She was much demented; pupils contracted, and responded feebly to light. During the last few days of her life she had frequent attacks of spasm of the diaphragm, and she developed bedsores.

The skull was symmetrical, rather thick and dense; sutures visible externally but indistinct in inner table. Brain: Weight, 800 grams. 210 cc. of fluid escaped from the subdural space when the dura was opened. Brain much compressed, and pointed anteriorly. Convolutions a little flattened; no appreciable amount of subarachnoid fluid; veins moderately filled. There was no appreciable change in the dura mater to account for the fluid,

and the pia mater showed only slight opacity and some whitish lines along the veins. The pituitary body was about four times the normal size.

This case was undoubtedly one of the rare instances of accumulation of intra-arachnoid, or subdural fluid compressing the brain, a true case of external hydrocephalus of unknown origin. There was no expansion of the skull bones, and therefore it was presumed to be acquired ; no past history of the patient could be obtained.

The subdural space in cases of extreme *oedema ex vacuo* of the pia sometimes contains a small quantity of fluid in excess of the normal, but so far I have only met with the one case which seems to come under this head of true external hydrocephalus.

Congenital Internal Hydrocephalus.—Case 2187.—P. L., aged 60, male, white, single, no occupation ; nativity, D. C. Mental disease, imbecility.

The history of this patient shows that at one time he possessed considerable intelligence. He had some musical ability, was able to converse with ordinary facility on current subjects. After his admission to the hospital he became rapidly more demented and finally ceased to talk ; became totally blind, probably deaf, and physically helpless. He lay in bed for months unable to stand or walk, and the lower limbs became spastic, and there was beginning contraction of knee and hip, especially of left side. He lay with his arms folded across his chest, resisting all efforts to straighten them. He was habitually constipated ; had irregular fever for many months without apparent cause. On March 3, 1907, was given a dose of castor oil, after which he appeared to sleep, but awoke in a few minutes with marked distress in breathing and signs of failure of the circulation. He failed to rally under stimulation, and died a few hours later. So far as could be learned, he had never any convulsive attacks, and his physical condition, aside from the brain disease, was fair.

Autopsy, nineteen hours after death.—Autopsy No. 2187.—The body is that of a small-sized and rather ill-developed white man. The head is enormously large, more noticeable at the posterior portion ; the occiput is prominent, and the biparietal width greatly increased. The circumference of the head at the largest diameter, viz : from the ophryon to the maximum occipital point, is 28½ inches (72.3 centimeters). From the glabella

to the inion over the scalp the diameter is $9\frac{9}{19}$ inches (24.3 centimeters); the biparietal diameter is 8 inches (20.3 centimeters); from the ophryon to the maximum occipital point the head measures $9\frac{3}{8}$ inches (23.6 centimeters).

The facies is not that of typical hydrocephalus. The forehead is prominent and high, but the superciliary ridges, frontal eminence and brows are well developed and fairly normal in appearance except in unusual size. The eyes are deeply set, overhung by the prominent and bushy brows, and there is no exophthalmos. (The patient had been blind for some years.) The nose is prominent and slightly Roman in type; beard full but closely shaven; jaws well developed; teeth absent in upper jaw and defective in the lower. The hair is scanty over the vertex but well set elsewhere; the ears are rather thin and the helix is not well developed.

The body shows no deformity but is rather small and ill developed; the right testicle lies just outside of the abdominal ring but has not descended into the scrotum. Rigor mortis is slight; no external signs of decomposition.

The scalp is of the usual thickness; temporal muscles relatively small; bregma situated about 1.5 c.m. to the right of the median line owing to overdevelopment of the upper anterior angle of the left parietal bone. Externally the sutures seem to be completely closed; a small Wormian bone in the lambda. The skull shows the following measurements: maximum length, from glabella to inion $9\frac{3}{8}$ inches (23.6 c.m.); from ophryon to maximum occipital point $9\frac{3}{16}$ inches (23.3 c.m.); maximum width of skull at biparietal diameter $7\frac{3}{4}$ inches (19.6 c.m.); horizontal circumference at largest place $27\frac{3}{4}$ inches (70.5 c.m.). Length of line from nasion to inion over the vertex 18 inches (45.7 c.m.); from the tip of one ear to the other 17 inches (43 centimeters).

The skull bone is unusually thick and dense; frontal bones measure about $\frac{5}{8}$ of an inch (1.6 c.m. in thickness); the occipital bones are $\frac{5}{16}$ of an inch (0.8 centimeters in thickness) and the temporal and parietal bones the same. The portion of the calva removed weighs 1,150 grams; frontal sinuses rather large; some asymmetry of skull, the right side being the larger. The dura is firmly adherent to the bone, and over the inner surface of right side is a thin neo-membrane.

Brain.—The brain is converted into a bag of fluid, a part of which escaped on removal; this fluid is found to be clear, and

measures 2400 cc. After removal of the ventricular fluid the brain weighs 1240 grams. Over the anterior portion of the brain-mantle the convolutions and fissures are fairly distinct, but over the parietal, temporal and occipital regions and the posterior medial surfaces there is no semblance of either, the brain being converted into a smooth bag of fluid. The arteries and veins are elongated, and attenuated ; vessels not diseased and the circle of Willis normal. Optic nerves, shrunken and small. Pituitary body encroached upon by the bone, but of normal size. Around the chiasma and the interpeduncular space the pia arachnoid seems to be thickened. Cerebellum about the normal size and shape, but overhung by the dilated cerebrum.

Sections of the brain made after partial hardening show that the brain-mantle back of the middle region is reduced to not over .4 of a centimeter in average thickness ; the cortex and white matter are, however, still distinct. There is no sign of any convolution or fissure visible internally except the hippocampi, which are still distinguishable. The middle cornua of the lateral ventricles are enormously dilated, hollowing out the temporal lobes ; posterior horns completely lost as such ; the anterior horns still distinguishable. The basal ganglia are flattened, the optic thalami small and white, apparently sclerotic. The septum pellucidum is completely destroyed, only a few shreds of tissue remaining to represent it ; anterior pillars of the fornix still distinguishable, but stretched and hardened ; traces of the *fimbriae fornicis* are perceptible ; the choroid plexuses are small, pale and flattened against the basal nuclei. On the right side, where the horizontal section passes a little lower than on the left, it passes through the caudate and lenticular nuclei and the capsules, which are still distinguishable. The corpus callosum is extremely thinned, and all connection with the fornix seems to be gone. The velum interpositum still covers the third ventricle, and the third and fourth ventricles are not appreciably dilated.

The ependyma is smooth, except a few rather large nodules at the base ; it is probably somewhat thickened, but this cannot well be determined by the naked eye.

The anterior portion of the brain is much better preserved, though the anterior cornua are much dilated. In fact, the actual size of the frontal lobes is not much greater than normal, the great dilatation of the ventricles being posteriorly. The thickness

of the brain-mantle, however, gradually decreases, being already quite thin in the motor or Rolandic area.

Thorax.—Lungs show some emphysema of anterior portions; some hypostasis posteriorly. Weight of right, 490 grams; left, 830 grams. Bronchial glands pigmented with carbon. Heart.—Weight, 250 grams. Organ flabby and a little dilated; tricuspid orifice a little enlarged; pulmonary valves normal; slight thickening of left valves.

Abdomen.—Spleen weighed 200 grams. Capsule tense; pulp contained numerous small phleboliths. Kidneys.—Weight of each, 140 grams. Capsules slightly adherent; cortex rather thin; some hyperaemia and edema. Liver.—Weight, 1300 grams. Tissue seems normal. Gall-bladder normal. Urinary bladder shows slight catarrh. Other organs showed nothing unusual.

The chief interest in this case is the somewhat remarkable preservation of a degree of intellect, and the age to which the patient lived. Of some psychological interest is the preservation of the frontal lobes, the supposed seat of the intellectual processes. The thickness of the skull, in connection with such a degree of hydrocephalus, was, of course, connected with the early ossification of the bones, and the preservation of an almost normal facies. The size of the head, though great, has been much exceeded; likewise the degree of dilatation and the quantity of fluid found in the ventricles.

The dementia and the later symptoms are, of course, to be expected, and the only wonder is that a brain so altered can perform its functions at all or even maintain life.

Congenital Internal Hydrocephalus (Synopsis).—Second Case.—To these cases I may add one of congenital internal hydrocephalus, at one time reported to the Society, and therefore only mentioned in synopsis. The patient in this case was a white male, aged 35 years. The head measured antero-posteriorly 9⅝ inches (24.4 cm.), transversely, 7 inches (17.8 centimeters). After removal of the scalp, the skull measured 25½ inches (64.7 cm.), and the biparietal diameter was 6⅜ inches (16.3 cm.) The skull in this case was thin and typical of the disease in shape and development. A cast taken of the interior of the skull displays about 98½ ounces of water, showing the cranial capacity to have been about 178 cubic inches.

Fifty-seven ounces of fluid (1685.0 cc.) escaped from the brain

on removal. The brain weighed 43½ ounces (1233.2 grams) when emptied of fluid; the brain-mantle was not over $\frac{3}{16}$ of an inch (.4 cm.) in thickness in some places.

In this case enlargement of the head was not noticed until the child was three months old, after which it rapidly increased in size until, at the age of two years, it was as large as at his death. This patient, though an imbecile, had some intelligence; he could talk, sing, and had a remarkably retentive memory for words and tunes. He was paralytic, but never had convulsions; he had marked lateral curvature of the spine.

Dr. Frank Baker said that with regard to etiology we know very little as to the cause of many cases of hydrocephalus. Dr. Blackburn had clearly shown that the condition may be of many kinds from many causes. In the internal variety, where does the fluid come from, and why is it not absorbed? We know that drainage does not cure the disease. What is the origin of this enormous increase of fluid? It seemed clear to Dr. Baker that it must come from serous tissue, as, for instance, the choroid plexus and the velum interpositum, which seem to have some secretory function. What means is supplied for removing this fluid? It has commonly been supposed that it is absorbed through the Pacchionian bodies. It seemed to him evident that any cause which retards or prevents the outflow of the cerebro-spinal fluid, might be sufficient to cause hydrocephalus: for instance, obstruction of the veins of Galen, as in one of Dr. Blackburn's cases; some defect in the Pacchionian bodies; or some constriction in the ventricles. Hilton, in "Rest and Pain," suggests constriction of the foramen of Magendie as a cause of hydrocephalus. This theory has not yet been proved; but as the foramen of Magendie is formed by partial absorption of the membrane during fetal life, if this absorption does not take place, intraventricular fluid is apt to overaccumulate. In the same class of defects may be added occlusion of the foramen of Monro, or constriction of the aqueduct of Sylvius. But it is necessary to go behind these mechanical causes. What primarily sets up the condition? The same overaccumulation of fluid occurs in other fetal anomalies, as in spina bifida. Scientific men have gone far afield to ascribe a cause, even to the illusory maternal impression idea. Also, the male parent has been blamed for it on account of intoxication, syphilis, disparity of age, etc. But most frequently there is pointed out in the history, some defect in the nutrition of one parent or the other at a critical age; toxic influences from the mother at about the third month; for example, there have been cases of acute infection at this period of gestation with the subsequent birth of hydrocephalic children. He had had some slight knowledge of the antecedents of one of

Dr. Blackburn's patients : the parents were neurotic and a brother had, at times, insane delusions. He mentioned this fact because there may often be found a neurotic tendency in the families of hydrocephalics.

It is very unusual to find a case of hydrocephalus so long-lived as that reported by Dr. Blackburn ; the well developed skull, with no Wormian bones, nor interlocking of the sutures, is also exceptional. There are, of course, anatomical changes in the brain in this disease ; there is a loss of myelination of the white fibers, or else the fibers do not assume the myelin sheaths at the proper period of development ; the cells retain their embryonic forms, but are functionally well correlated.

Blindness is common in this disease, and is due to pressure upon the cavernous sinus, producing occlusion of the ophthalmic vein with choked disc. This occurred in one of Dr. Blackburn's cases.

Dr. Vaughan said that he could add nothing to the etiology so well explained by Dr. Baker. He thinks that there is something of truth in the theory of defective circulation of fluid between the ventricles and subarachnoid space, and an operation has been devised based on this idea. Of course, obstruction at the foramen of Magendie or of Monro might constitute the impediment to circulation, and defects of this sort might as easily occur *in utero* as hare-lip or spina bifida. The treatment is the main thing after all, since the prognosis is not always fatal by any means. Church and Petersen remark that the number of individuals who walk about with " beetling brow and overhanging occiputs" is proof of the spontaneous arrest of the process. Medical treatment accomplishes nothing. A number of surgical methods have been devised. Compression is a well-known procedure, and is accomplished by means of bandages or adhesive plaster, applied with or without withdrawal of the fluid. The method is a safe one when accompanied by tapping. The ventricle may be tapped through the dilated fontanelle with an aspirating needle or a canula. Some cases have been drained, but they all die of meningitis in spite of the most scrupulous care. If the sutures and fontanelles have closed, the skull may be trephined and the lateral ventricle drained. McArthur, after Rokitansky, suggested drainage of the ventricles into the tissues under the scalp. Senn has done this operation, as have Church and Petersen. The skull is trephined in front and a little above the ear, or an osteoplastic flap may be raised ; the brain is exposed, the ventricle found with a hollow needle, a tube or other drain is introduced into the ventricle and left under the scalp. Another operation, devised by Sutherland and Cheyne, is designed to institute drainage from the ventricle into the subarachnoid space. It has been done successfully a number of times. It is only necessary to drain one ventricle. Turn up an osteoplastic flap, find the ventricle, introduce a skein of chromic gut and leave the outer extremity under the dura, closing the dura and skull. This method seems to promise the best results.

Dr. D. S. Lamb, speaking of causes, said that hydrocephalus is common in the lower animals, especially in calves; as far as syphilis and alcohol are concerned, they may safely be excluded in these cases; there must, therefore, be some more universal cause of the anomaly. As to longevity, there is a skull in the Army Medical Museum of an Indian woman, who had hydrocephalus, and who died at 85 years of age. The woman was a dwarf, with an enormous skull; the brain and fluid weighed 74 ounces, though the brain itself was relatively small.

He found in one case distention of the fifth ventricle to a degree sufficient to constitute a moderate degree of hydrocephalus. As to mentality, the faculty of memory may be well preserved or even over acute. He had performed an autopsy upon a boy nine years of age, with hydrocephalus, who had been able to repeat from memory 150 lines of poetry read to him for the first time the day before.

As to hydrocephalus *ex vacuo*, there is a medico-legal aspect of interest in this class of cases. He has had twice to go into court in will cases in which he had found the condition *post mortem* in the testator. Were these persons insane? Did the condition affect the testamentary capacity, or might it? He could not say. For this reason, it is important to know to what extent mentality is impaired by atrophy of the brain.

Dr. Abbe said that while a student in New York he had often speculated upon the possibility of hydrocephalus as a cause of the enormous head of one of his eminent professors. The brain-power here was certainly not below par, and he would like to know if increased mentality is ever associated with hydrocephalus.

Last summer he had seen a child, four weeks old, with hydrocephalus, spina bifida and club-feet; he had taken a photograph of this child [which he presented]. The infant was marantic and only lived a week or two. He showed the photograph simply as a curiosity.

Dr. Blackburn expressed his thanks for the remarks which had been made. He believes that a degree of hydrocephalus is not incompatible with a high degree of mentality; he had seen some patients at St. Elizabeth's Asylum who, prior to the incidence of insanity, were mentally well endowed. He had seen many individuals not insane who appeared to have dilatation of the ventricles, and it has been said that Thackeray was hydrocephalic.

As to the underlying pathology of the disease, the cases Dr. Blackburn has studied have been so old that he has been unable to determine whether the changes which were seen were primary or secondary.

FLOATING SPLEEN.*

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The feeble attachments of the kidneys and spleen predispose to a loosening and prolapsed state of these organs. The spleen, more substantially anchored, is held in place by ligaments formed by the reduplications of the peritoneum. One of these is attached to the diaphragm, extends to the upper end of the spleen, and is known as the phrenico-splenic or suspensory ligament, and is of the greatest service in retaining the spleen in its normal position. Another, the gastro-splenic ligament, is a fold of omentum extending from the fundus of the stomach to the hilum of the spleen, and contains the nerves and vessels which supply that organ. A third, the phrenico-colic ligament, extends from the under side of the spleen to the flexure of the colon. The combined action of these rather insecure supports serves to keep the organ in its proper place under ordinary conditions. According to Litten, there are three congenital abnormalities of position : First, where the spleen is extra-abdominal in ventral or umbilical hernia ; second, where it is situated in the left half of the thorax above the diaphragm ; and, third, where it is found on the right side in cases of transposed viscera. A distinction is made in terms between a spleen which moves freely within the abdominal cavity and one which has become incarcerated or has developed adhesions in some unnatural position. The first is referred to as floating or wandering, the latter as dislocated—this last term in some way acquiring the meaning of fixation.

Mobility depends upon the amount of stretching of the ligaments, and there may be only a slight descent, or the spleen may be found in any part of the abdominal cavity, the excursions being limited only by the length of the pedicle. It may be wedged in the pelvis or become inflamed or strangulated. It may, by the development of a perisplenitis or by coming in contact with an inflamed peritoneal surface, acquire permanent adhesions. Broadly speaking, women are the only sufferers. It is a disease of sex.

According to the observation of careful men, the spleen has

* Read before the Medical Society, March 13, 1907.

been found floating for a time and afterwards, for an uncertain period, would remain in its normal position.

With prolapse of the spleen there is a tendency to rotation, due, probably, to the peristaltic action of the bowels and gravity with the changes of position of the body. Bland Sutton says that the spleen does not always move with gravity. When the patient turns over on his right side, the spleen, by its weight, falls over; but at other times it may not do so, but acts as though it floated on the intestines, like a boat on water. The tail of the pancreas has been found drawn out into the splenic pedicle like a slender cord.

Causes.—Glenard first called attention to wide-spread visceral displacements. The organs usually involved are the stomach, intestines and kidneys; more rarely the liver, pancreas, pelvic organs and spleen. The splenoptosis, like all the other ptoses, was due to weakness and relaxation of the supports. Glenard, in 160 cases of enteroptosis, found the spleen displaced only twice. A congenitally relaxed abdominal wall, or a flaccid condition dependent upon child bearing, or sedentary occupations tending to weaken the muscles, predispose to mobility. These are some of the causes especially active in women.

Some observers have noticed a tendency in certain families.

Congenitally abnormal length of the ligaments independent of Glenard's disease is a cause.

Many cases are the result of traumatism, and date from a severe effort of lifting or from a fall or direct blow. The suspensory ligament may be forcibly torn, resulting in an acute displacement.

Increased size of the spleen is a potent factor. The constant dragging of a large organ upon its delicate attachments finally results in a giving way. Enlargements are due to many causes, the most common being malaria, leucemia, septic conditions and tumors. A wandering spleen is nearly always larger than normal, but some are not increased in size. It is possible that they may have been large before they became loose and underwent shrinkage afterwards. On the other hand, a small spleen through repeated congestions may reach considerable dimensions.

Bland Sutton has found exposure to the air to have a marked effect upon the size. Upon operating upon a congested floating spleen he held it up in his hands a few minutes before removing it and it shrank to one-third the size. Extensive injuries to the

abdominal walls may cause an external prolapse of this organ. It may be forced downward by pleural effusions of the left side, by tumors or by spinal deformities.

Displacement is not necessarily attended with symptoms. Long-standing cases sometimes have no discomfort whatever, and the finding of a movable spleen may be purely accidental, and the first indication of the existence of the condition.

The symptoms may be slight, a sense of dragging, or weight, or pressure in the splenic or left lumbar region. Pain is frequent. It may be steady or paroxysmal, or continuous with exacerbations. It may be in the spleen, radiating to some other part, as the stomach, back, heart, thigh, shoulders. The location of the pain depends a good deal upon the position of the spleen. Pressure on a spinal nerve is said to have caused paralysis of the leg. The pressure of the spleen or its pedicle upon any part of the intestinal canal may cause obstruction. Dragging on the duodenum and stomach will produce nausea and vomiting and other digestive disturbances. Jaundice has resulted from traction on the bile passages. Irritation of the bladder and rectum may come from contact of the spleen with these organs.

Its presence in the pelvis may result in uterine displacement, backache, dysmenorrhoea and a sense of weight. Gangrene of the stomach and dilatation have been observed.

When the organ becomes adherent to any particular structure the symptoms are localized and become permanent. All sorts of reflex disturbances have been noticed. When the pedicle becomes suddenly and extensively twisted we have obstruction to the circulation and the symptoms are fulminating. There is a sharp, agonizing pain, and with it nausea and vomiting. Distension of the abdomen is usual and tenderness exists.

The spleen may reach huge proportions and become tense almost to the point of rupture. The vascular engorgement may be so great as to simulate a cystic tumor. There are symptoms of collapse; even without rupture the patient may be collapsed from intensity of pain.

The pulse is weak and fast and the respiration shallow and labored.

Urso says that the most important supported symptom is a sudden acute anemia following the rapid onset of symptoms and increased size of the organ.

If the obstruction of the circulation is permanent or protracted, thrombosis and death of the organ occur with infection as a frequent sequence. Occasionally it will undergo a slow atrophy or assimilation. Some operators really suggest artificial twisting of the pedicle to accomplish this result.

Through excessive twisting of the pedicle it has become detached, just as a pedunculated fibroid has been known to do, and has, by attachments to some other tissues, acquired a vicarious circulation.

The diagnosis is usually simple. The absence of dulness in the splenic region and presence of a firm, rather concavo-convex body somewhere in the abdominal cavity, having a notched border, and pulsating vessels on the concave side, and which can be pushed up to where the spleen belongs, leaves small doubt as to the nature of the trouble. Swinging by its ligament, its position is usually horizontal.

Absence of splenic dulness by itself is not a positive sign; for in the old the organ may be very small, and in some there is congenital deficiency. Wandering spleens have been confounded with movable kidneys, cysts of the ovary and pedunculated fibroids, and where twisting occurs the symptoms may be similar. Less frequently we have to differentiate from such conditions as impacted large intestine, mesenteric tumors and intestinal obstruction.

When the spleen reaches a large size from engorgement or pathological changes and extends into the pelvis or markedly alters its position, it is not always easy to make a diagnosis. Some of our best men have been confounded; for example: McMurty operated, thinking he had an ovarian cyst or cystic kidney. Ashby, believing he had an impacted pelvic fibroid with infection, operated during an attack of typhoid fever, with recovery. I. S. Stone, mistaking one for a pelvic tumor, removed a spleen with twisted pedicle and thrombosis of the splenic veins. The patient recovered. Polk expected to treat a pelvic abscess, and Dunning, with a spleen adherent to the upper part of an enlarged uterus, thought to remove a subserous fibroid.

I wish to report two cases which possess some interesting features. The first I presented in a paper before the Society a few years ago, and for that reason will give only a brief résumé.

Mrs. W. W., age 32, was admitted to the Garfield Hospital

July, 1900. At the age of sixteen she had a severe attack of malarial fever which lasted three months, and since then she has had several milder attacks. She has suffered a great deal from indigestion, especially during the year before admission ; the symptoms being pain and feeling of weight in the region of the stomach, and acid eructations, with a sense of suffocation and palpitation.

She has had four children. The third child was born eight years before I saw her, and at the time of delivery her physician called her attention to a tumor in the right side of the abdomen on a level with the crest of the ilium. This was movable and about the size of a baseball. It was tender on pressure, and the wearing of tight clothing was impossible.

During the last year she has had sharp, shooting pains at intervals, and severe burning in the upper part of her back.

Four years ago she had sharp paroxysms of pain in the lower part of the abdomen lasting for ten or fifteen minutes, during which she would have to bend sharply forward. There has been a progressive loss of flesh and strength, especially noticeable during the last year. Two weeks before admission she was attacked with violent pains. These subsided after a week, only to recur three days before going to the hospital, and with them were attacks of nausea and vomiting, and general abdominal tenderness. There was tenesmus upon attempting to empty the bladder, with retention of urine. There was more or less persistent temperature, the highest being 102.5.

Examination.—The abdomen was decidedly enlarged on the right side. A smooth, firm, elastic surface could be felt extending from the ribs into the pelvis. Laterally it extended from the linea alba well over into the right flank.

The area of normal splenic dulness was absent. Examination by vagina revealed a displaced uterus, and towards the left a firm mass with sharply defined edge. A diagnosis of hypertrophied septic malarial spleen was made and operation performed August, 1900, Dr. Van Rensselaer assisting. Upon examination the abdomen immediately prior to operating the firm area was replaced by one of fluctuation, but upon deep pressure the surface of the spleen could be felt.

Evidently there had been a rapid accumulation of some kind of fluid. A long median incision was made. The omentum was

adherent to the anterior abdominal wall and bladder. This was taken advantage of to protect the intestines and the omentum was separated from the bladder and over to the right. There was a discharge of about a quart of dirty chocolate-colored fluid.

Within a pyogenic membrane rested a large degenerating spleen. The organ shelved out so as to make the exposure of the pedicle impossible. So the ligation was done by means of pedicle needles and clamps. Upon examining the pedicle all the vessels were found to be thrombosed. Suitable drainage was provided. After the operation there were no complications and she made a good recovery. Blood counts were made before and after the operation. Before, there were 3,820,000 reds and 23,200 whites; six days later, 4,580,000 reds and 11,900 whites. The change in the count is due solely to the removal of a dangerous source of infection, and compares in no way with the result after the removal of a functionating spleen. The complete diagnosis of this case may be given as a floating spleen, which subsequently became fixed; malarial hypertrophy, infective splenitis, suppurative peri-splenitis and thrombosis of the splenic vessels.

The second patient, Mrs. D. W., age 31, married; mother of three children, six, four and three years old, respectively. They were all small at birth and no difficulty attended their delivery.

When quite young she was delicate, but at the age of ten she began to improve, and continued in average good health. She had no disease which could have influenced the development of splenic displacement. About eleven years ago she began to complain of pain in the left side. At first it amounted to little, nothing more than a sense of discomfort which could be relieved in a short time by the application of heat. After that she "could get up and go to a dance," to use her own words. The attacks occurred at long intervals, not much oftener than every three months; but they gradually increased in severity. She thought they might have been caused by too vigorous use of the sewing machine; but another probable cause, and the one closely associated with the appearance of the pain, was the moving into a new house. The back yard contained a number of bricks and pieces of earthen pipe, and these she had to throw over a fence. Immediately upon this the pain began. At first it felt like a heavy weight and continued so for two years. She had been annoyed by acid eructations and other dyspeptic symptoms. Eight years

ago, before her marriage (and I mention this to exclude child-bearing as a factor in her case), the pains became severe and she would sometimes have to stay in bed for a week. The history of the attack was about as follows: Severe pain, swelling in the left side, nausea and vomiting, inability to eat anything, confinement to bed for a few days.

During later years there was an almost constant feeling of heaviness which filled up the intervals between the attacks; but, what seemed strange, she passed through a whole month at one time without a symptom. The attacks finally occurred as often as every two weeks, and were increasingly severe and accompanied by great prostration. The pain would begin in the side and work around to the epigastric region.

In September, 1905, she came to my attention through the advice of Dr. John Shaw. Upon examination I found a thin abdominal wall and I could palpate a freely movable kidney. The area of splenic dulness was slightly increased, but the spleen was not displaced; nor was it displaceable in the sitting or standing position.

Finding no other explanation for her condition, I suggested double nephrorrhaphy. This she consented to, and the operation was performed in September, 1905.

While anchoring the left kidney I was able to palpate and move the spleen, and the idea occurred that the spleen, after all, might have something to do with her symptoms. Rather than attempt anything more at that time, I decided to keep her under close observation. Her convalescence was uninterrupted until the seventh day, when she was seized with severe pain in the left side, both behind and in front. Her temperature rose to 101 and the pulse was quickened. For seven days her symptoms increased in severity. The pain became agonizing, the skin was moist and pale and at times she seemed to be in a state of collapse. On the thirteenth day, just before her improvement, the temperature reached 103, after which it quickly dropped to normal, with complete relief from all symptoms.

During the attack just referred to a large swelling developed in the left side. This quickly filled up all the space between the ribs and pelvis, extending from the flank to the mid line. It had the resiliency of a cyst and was extremely tender. The diagnosis of floating spleen with twisted pedicle was made positive.

During the time of torsion of the pedicle the leucocytes rose to 14,600, but a few days later dropped to 9,600.

A second operation was performed October 21, 1905. An incision was made along the other border of the left rectus muscle, and later another, extending along the edge of the ribs, to admit of good exposure.

A spleen a little less than twice the normal size was removed without difficulty. Silk sutures were used for ligating the pedicle. She had no shock during or subsequent to the operation and none of the unpleasant symptoms said to accompany the removal of a floating spleen.

The blood count on the day before the operation was 4,040,000 reds and 11,300 whites. On the day afterward, 3,830,000 reds and 27,000 whites. Three days later, 3,700,000 reds and 19,000 whites. Four days later, 4,230,000 reds and 13,600 whites. Eleven days later, 4,230,000 reds and 10,900 whites. Twenty-two days later, 4,390,000 reds and 11,000 whites.

At the last report, about a month ago, she was stronger than she had been for years, and had gained 20 pounds.

Floating spleen does not always require treatment, nor are symptoms necessarily present. If relief is required, one naturally considers the possibility of accomplishing results by the administration of drugs. Reduction of the size of the spleen by medical treatment is practically limited to those organs enlarged through malarial fever ; but little dependence can be placed on it where we have marked hypertrophy.

The application of abdominal supports is rational, and frequently the patient will secure relief. It is often impossible to adjust a belt, and then comes up for consideration the advantages of the operations, splenopexy and splenectomy.

The stitching of such a vascular organ is attended with considerable danger, and a number of expedients have been tried to avoid this, none of which are thoroughly satisfactory. Rydygier, one of the first to experiment along this line, succeeded in fixing the spleen. He made an incision through the linea alba, pushed the spleen back into its normal position so as to get his bearings; then retracted it and made a transverse incision through the peritoneum high up, separated the peritoneum below the incision, thus forming a pocket, into which he slipped the lower end of the spleen. To prevent it from pulling the peritoneum loose,

he secured it at the bottom of the pouch to the deeper layers of tissue by a few stitches. The edge of the pouch was fastened to the gastro-splenic ligament.

Sykoff used a net of catgut. This catgut was wound around the organ many times and fastened to its bed. He maintains that by this method the spleen retains its function, fixation bands replace the catgut and by the contraction of newly formed connective tissue it shrinks in size.

Kouwer attempted fixation in two cases by making an oblique lumbar incision and packing gauze against the spleen. The packing was kept in for a month to permit of healing by granulation, and he reports a good result with his first patient. Symptoms of intestinal obstruction developed with the second and he was compelled to remove the gauze.

Houjel, in operating for a supposed ovarian cyst, found the spleen and endeavored to fasten it by sewing the capsule to the parietal peritoneum, leaving the spleen exposed to the outside to a width of four inches. The exposed part became soft and gangrenous, and in the course of a month the spleen had passed away in sloughs. Of three cases reported, one died.

Bardenheuer, in order to anchor the spleen, placed a suture around the tenth rib.

Waring made an incision along the outer side of the left rectus muscle. He then made a three-inch incision through the skin in the space between the eighth and ninth ribs. After scarifying the peritoneum he passed three heavy chromatized catgut sutures through the suspensory ligament, and by the sense of touch passed the needles threaded with this gut out through the incision between the ribs and tied the sutures.

Oppel passed a suture through the upper pole of the spleen and through the diaphragm, and two others through the anterior and posterior margins of the peritoneum.

Hale found a spleen with a small lower pole and a well-marked contraction between it and the rest of the organ. He brought the lower end out through the opening, stitched the peritoneum and aponeurosis around the contraction and sewed the muscle and skin over. She made a tedious recovery.

Tuffier operated first in 1882, stitching the spleen to the diaphragm and abdominal wall, and he is probably entitled to the credit of the first fixation.

These operations, like the various ones devised for posterior displacements of the uterus, are numerous and ingenious. Some of them appeal very little to our surgical sense. Opinions as to results are not at all harmonious. No one of these operations has been sufficiently tried to enable us to reach conclusions from a sufficient number of cases. With a spleen of normal size the operation is more likely to be successful ; but as most floating spleens are enlarged from one cause or another the sphere of these operations is limited.

Splenectomy is considered a rational treatment in those cases where relief is not obtainable in other ways than operative, and has a very moderate mortality. In recent years the results have steadily improved. Bessel Hagan, in 164 splenectomies for various conditions between 1890 and 1900, found a death rate of 19 per cent., and Stierlien, who investigated the mortality in connection with floating spleen, states that only 6.25 per cent. died. With this encouraging prognosis the operation has justification. Concerning the effects of splenectomy upon the organism it is sufficient to say that they are transient and much overrated. The red blood cells are reduced for a time, the whites markedly increased, and the haemoglobin per cent. reduced. The lymph glands are sometimes enlarged and there are occasional psychic phenomena.

Dr. I. S. Stone congratulated Dr. Stavely upon the presentation of a most interesting paper and the Society upon hearing it. The question as to the effect of splenectomy upon the organism has been so frequently asked that Dr. Stone was anxious that the profession should be assured, as had been brought out in the paper, that no serious results follow extirpation of the spleen.

He had seen only one case of floating spleen ; this came under observation a good many years ago and he did not then dare to remove it. He had the good fortune to observe this case later, and found that partial rotation of the organ, with altered circulation, had resulted not in atrophy, as might be expected, but in hypertrophy. Fever always attends this condition.

An interesting question is, Why should there be pain with these floating organs ? It is an almost constant symptom.

It is surprising that anyone should seek to anchor a floating spleen, when the procedure is so very unsatisfactory. Splenectomy is too safe to render the mutilating operations for fixation, as described in the paper, admissible ; and extirpation should always be preferred.

Dr. Stavely said that in thrombosis of the splenic vessels, atrophy of the organ is to be expected. The hypertrophy following partial torsion of the vessels, spoken of by Dr. Stone, was the first stage of the result; atrophy occurs later.

SOME CASES TREATED WITH RADIUM.*

By TRUMAN ABBE, A. B, M. D.,

Washington, D. C.

It is with considerable diffidence that I undertake to speak in this hall to this Society on the subject of radium, even after the lapse of a year from the time that Dr. Robert Abbe gave you that most delightful talk and most beautiful demonstration of what he had done with radium. The impression of that evening's entertainment, with its fascinating words of inspiration and its graphic and yet charming models of what radium had done for the many cases treated, I know, from the repeated references to it that I have heard, will never be forgotten by those who heard and saw. But there are still other facts concerning radium treatment that you may be interested in, and so I have dared to speak again.

Some of you may remember, some two and a half years ago, looking through a small spinthariscope at the twinkling stars caused by the illumination of a fluorescent screen illuminated by the emanations from the tiniest particle of radium held on a pointer in front of the screen and looked at through a magnifying glass. If tonight you will look through that same spinthariscope you will see that same speck of radium giving off its emanations just as it did then, and just as it has been doing ever since, and will keep on doing until we are all dead and buried. We may not see it all the time, but its activity keeps up just the same, a marvelous source of energy. And at the same time that bit of radium is giving off rays that produce electrical effects as shown in its discharging any electroscope that may be brought near it, others that produce physical effects as shown in causing

*Read before the Medical Society of the District of Columbia, April 24, 1907.

a fluorescence in the fluorescent bodies that are brought near it, or still other chemical effects shown by the changes in a photographic plate that comes into its vicinity—effects so very like those of the Roentgen rays and yet so different. The difference can be seen at once by comparing the Roentgen and the radium photographs of the pistol taken on the same plate. The radium photographs have not become more distinct than those produced several years ago, though with the stronger specimens we can produce the same effect in a much shorter time, and can now show greater penetration. Fortunately, the Roentgen photographs that are so much more quickly taken are much more sharply defined.

The effect on bacteria in contrast to the effect of the Roentgen rays, which is practically insignificant, has been shown for radium to be inhibitive or lethal to a number of germs that are of interest in medicine, including tubercle bacilli, typhoid, cholera and diphtheria germs, staphylococcus aureus and anthrax; even the anthrax spores are destroyed. Of interest in comparison with the effect on bacteria, is the great resistance of many ferments. Some offer very little resistance to the radium rays, but, on the other hand, the digestive enzymes, including pepsin and trypsin, not only are very resistant but seem to have their activity, so far as reported, increased by the action of the radium. In this connection should be remembered the fact that in some seeds exposures for a short period of time increased the rate of growth, while longer exposures completely inhibited growth.

Of the physiological effects the one that is most easily noted, even from weak specimens, is the analgesia that has been noted in a number of conditions. In addition to the relief of the pains of cancer that has been so widely noted, marked relief has also been given in the pain of iritis, cyclitis, various neuralgias, tic douleureux and the crises and lightning pains of locomotor ataxia.

The method of action of radium has been studied and several theories advanced to explain its effects. One, that the radium causes a decomposition of lecithin, a fat found mostly in the more rapidly-growing tissues and in the central nervous system, and by its decomposition interferes with the growth of the tissue. A second theory is that radium increases the activities of certain proteolytic ferments in the cells, which tend to destroy the cells where these ferments are most abundant, and at the same time

the radium decreases the activities of other ferments which normally would increase the cell-growth. These two theories are not incompatible, and in fact may be interpreted as being essential to one another, the decomposition products of the lecithin being the direct stimulants or depressors of the ferment action. In a number of cases there also seem to be other factors at work, as for instance, in nevus cases, which appear to heal, certainly in part, from the obliteration of the bloodvessels. But the destruction of the bloodvessels, on the other hand, cannot explain the results in many of the other cases.

The number of clinical reports of cases treated with radium is steadily increasing. In some the treatment has been with very weak specimens of radium, small quantities and of short duration, and the growths treated have been late extensive growths where constitutional involvement is already evident. In other cases the treatment has been with powerful radium in larger or smaller quantities and for a longer time. In the following table I have put together all the reports that I have obtained notes on, and have classified them as having adequate or inadequate treatment by an arbitrary standard as near as I could judge from the description of the cases, and the details of the treatment as they have been reported. For instance, in a case of cancer of the breast with multiple nodules in the skin and involvement of the axillary glands I have considered that no treatment has been adequate, because it is extremely improbable that the supply of radium was sufficient to treat all the areas that showed on the surface, and extremely probable that there were also multiple deep metastases that would not be treated at all. And yet from the report of the local disappearance of nodules the case certainly deserves to be classed as improved, although the patient died of the cancer while under treatment. If the nodule that disappeared had been the primary nodule, or if the treatment had been adequate, the result probably would have been a cure to the credit of radium and not a death in spite of treatment. Hence the marked variations in the results obtained by different men using radium are essentially not a conflict in the report of the ability of radium, but a misinterpretation of the results from variation in the adequacy of dosage. However, the table shows what results have been attained and what some of the possibilities may be.

Disease.	Treatment.		Result.		
	Sufficient.	Scant.	Cured.	Impr'vd.	No effect.
Cancer: Skin,	90	14	69	30	5
Esophagus,	. .	7	. .	7	. .
Uterus,	10	5	1	8	2
Tongue,	. .	7	. .	7	. .
Breast,	. .	14	. .	13	. .
Rectum,	. .	2	. .	2	. .
Bladder,	. .	3	. .	2	. .
Jaws,	. .	6	. .	6	. .
Tonsil,	. .	1	. .	1	. .
Parotid,	. .	2	. .	2	. .
Neck,	. .	3	. .	3	. .
Unstated,	38	. .	. .	38	. .
Sarcoma,	16	9	6	8	2
Lupus,	46	9	45	10	. .
Nevus,	10	. .	10	. .	. .
Pigmented Mole,	9	1	9	1	. .
Verruca,	14	1	13	. .	2
Psoriasis,	5	. .	3	2	. .
Acne,	1	1	1	1	. .
Eczema,	4	. .	. .	2	2
Keloid,	4	. .	3	1	. .
Exophthalmic goiter,	4	8	3	4	5 (?)
Tubercular ulcer of tongue,	1	. .	1	. .	. .

Of these cases, a few of my own I have deemed interesting enough to make a few comments upon.

The anesthetic effect of the radium applications was emphasized in one case of posthemiplegic hyperesthesia of the fingers and arm that Dr. Fremont-Smith asked me to see with him. All previous attempts to allay the sensitiveness had been of no avail. We applied the radium to the finger tips, the hand and along the course of the nerves, on various occasions, with considerable relief of pain.

Two cases of cancer of the rectum, with stenosis, I feel have been helped by the radium more than they could have been by any other form of treatment in the relief of the pain, the discharge, the bleeding, and the relief of the stenosis. They were both inoperable cases, and obstruction of the colon was threatened in both. In one the stricture allowed the passage of a sound, number 12 F., at the time I first saw him, and under treatment the stricture dilated till it admitted the finger, and the opening was kept at that size until the patient died of cachexia, an end cer-

tainly more comfortable than either the intestinal obstruction that threatened or the artificial anus that would have followed operation. The other case developed later a recto-vaginal fistula, but still has occasional movements through the stricture. Her comfort has been increased and possibly her life prolonged by the treatment.

A case of urethral caruncle has recently come to me for relief after having had two operations and numerous other lines of treatment. Under three or four exposures of less than five minutes each the mass has decreased to perhaps one-fourth its original size and the pains have been greatly relieved. The few days just after treatment are wholly without pain, and the subsequent ones a great improvement over anything the woman has had for years. One great advantage of this mode of treatment in these cases of markedly sensitive growths is, that as the growth does not need to be touched there is absolutely no pain from the treatment; on the contrary, the patient gets up from the table with marked immediate relief from the previous distress.

Four cases of cancer of the uterus I have treated with radium, three of these with x-rays also. All of the cases were inoperable, and it was not with the expectation of cure that radium treatment was undertaken, though one case of cancer of the uterus has been reported as cured by radium treatment. The last one of my series has given the most hopeful results. The patient was an out-of-town woman, referred to me by Dr. Bowen, after he had had her on the table for radical operation, and then, under the more careful examination possible under the anesthetic, had concluded that the growth was not suitable for radical removal. The cancer had its origin near the internal os apparently, for at times the exit of the discharge would become blocked and she would have retention, with chills, fever, and then a copious discharge, with relief. The uterus was somewhat enlarged and adherent, the cervix eroded, the left broad ligament infiltrated, and the left iliac glands enlarged. She had both x-ray and radium treatment. The part of the treatment that I consider the most effective was the introduction of a tube of radium (activity 300,000) into the cervix and allowing it to stay *in situ* 48 or more hours at a time. Her last treatment was nearly three months ago. At that time the cervix was smooth, the uterus more easily moved, the broad-ligament infiltration much less, the enlarge-

ment of the iliac glands almost disappeared, and the patient had had no more of the attacks of retention with chills and fever, for several weeks. A letter from her recently says that she had not felt so well for years, was gaining flesh and strength, and enjoying her housework. I do not expect her to get well, but the results are certainly better than were promised her from operation, and there has been no risk from the treatment.

Three cases of exophthalmic goiter are interesting in connection with the other methods of treatment recently discussed. One of the cases refused to have anything more than external applications made. She had various lines of treatment, and a couple of weeks after stopping radium treatment, while under serum treatment, she considerably improved. In the second case, I buried a tube of radium (300,000) in the gland, and let it stay there for 24 hours. That was followed by marked relief from the nervous symptoms and from the tachycardia for several months. Then the external application of radium (1,800,000 activity) for perhaps an hour *in toto* again brought relief for a couple of months. Recently the heart began to give symptoms, and she wandered off again to see if some one else could not cure her; but she came back, still refusing operation and saying nothing else had relieved her like the radium.

The third case Dr. Sprigg asked me to see with himself and Dr. Robins, last March. Mrs. P., aged 50, had had an enlarged thyroid for two years with symptoms progressing from bad to worse for the past month, so that when we saw her together she had been in bed for several weeks, and for ten days or more irrational and extremely restless, attempting to get out of bed, muttering; urination and sometimes defecation had been involuntary, and swallowing was not always certain. There was a pharyngeal paralysis, and more or less glosso-labial paralysis. The eyeballs were protruding, the pulse intermittent, from 90 to 100 beats per minute. The thyroid was perhaps three or four times normal size, larger on the right side than on the left. We made almost continuous applications of a tube of radium to the skin for forty-eight hours, and then, as there was no improvement, but rather an increase of the symptoms of the bulbar paralysis and an increase in the rapidity and irregularity of the pulse, we buried the tube in the thyroid tissue on the right side.

On account of the patient's mental condition no anesthetic was

necessary. At the end of twenty-four hours there was no improvement, and on account of the patient's desperate condition we decided to leave the radium in the gland and wait for developments, a slough in the neck being less to be considered, even if we got it, than the existing constitutional condition. We removed the tube on the fourth day, after it had remained in the gland for ninety-three hours. The symptoms had not improved; on the contrary, the bulbar paralysis seemed more marked, the pulse more rapid and irregular and the respirations becoming shallow and weak; and the temperature had risen. The chart showed, pulse 140, respiration 40, and temperature 101.6. The next few days saw the pulse begin to come down and grow stronger, the restlessness less, the true sleep more, the swallowing improved, the irrationality faded away, and the involuntary defecations and urinations stopped. Twelve days after the radium was removed she was propped up in bed, and a week later allowed out of bed to use the commode. Three weeks after the radium was removed, instead of the constant irrationality of the period before the radium was inserted, the nurse noted that the mind was "a little confused," and at the end of a month she was beginning to get up. She improved steadily for eight or ten months, and then began to develop her old nervous symptoms again. Some three weeks ago she came back to me again to ask if anything could be done for her, and once more we applied the radium and have since been making applications of the radium (1,800,000 activity) for fifteen minutes twice a week. The skin is extremely sensitive, blistering on a six-minute exposure at one spot. But she already feels like another woman and better than she has at any time since she first noticed the lump in her neck. In view of the nine cases of exophthalmic goiter reported by Dr. Robert Abbe, three of which were cured and a fourth having a marked reduction in the size of the mass, it seems but fair to say that all three of these cases were improved by the radium treatment.

In conclusion we may summarize the effect of radium treatment:

1. Though very much like the x-rays, the radium rays are different, and will cure some cases which resist the x-rays.

2. Radium is applicable in cavities and some deep tissues which are not accessible to the x-rays.

3. Radium has a marked analgesic action in many nerve pains, some acute inflammations, and most cancers.

4. Radium has been used successfully in the treatment of warts, pigmented moles, vascular nevi, urethral caruncle, some cases of psoriasis, acne and keloid; in the stenosis of the esophagus and rectum from malignant disease; in 80 per cent. of the cases of lupus, all the other 20 per cent. being improved; in 66 per cent. of the cases of malignant growths of the skin, and with improvement in an additional 20 per cent.; in many tangible cancers with improvement; in exophthalmic goitre, with cures in 33 per cent., and improvement in an additional 44 per cent. of the cases.

Dr. Metzerott said that he had not used radium for some time and had grown pessimistic as to its therapeutic powers. He believed that he could attribute the effects in the cases reported by Dr. Abbe to other causes than the radium. He believed that lupus is the only disease amenable to radium treatment. In the cases of stenosis, as esophageal stenosis, he thought that only the analgesic effect could be claimed for the radium; the increased patency of the canal was probably brought about by sloughing.

Dr. O. Wilkinson said that he had procured some radium about a year ago, and had used it in three cases of epithelioma of the face and lids; two cases had been cured, one much relieved. In a case of cancer of the throat, no benefit had been obtained, except analgesia persisting for two or three days after treatment. That the radium actually produced the analgesia he had proved by leaving the radium out of the tube at one treatment, which was followed by no effect upon the pain. He has found that it acts well upon granulated lids: the lid is everted, cocainized, and exposed to radium for two or three minutes.

Dr. Fremont-Smith said that a case of post-hemiplegic hyperesthesia under his care had been greatly helped by radium; six or eight exposures were followed by complete relief of all symptoms, which relief continued for three months. Since then the patient has not been so situated as to have access to radium treatment.

Dr. Reyburn said that he has for some time been especially interested in studying cancer. He has had no experience with radium, but has had with x-rays, and believed that the effects are practically the same. In his opinion, the use of either is unphilosophical; both agents are directed against the effects of the disease rather than against the cause. Study must be directed more and more toward the ultimate cause before substantial results can be achieved.

Dr. I. S. Stone said that he could testify to the analgesic effect of radium upon two patients treated for him by Dr. Abbe; the pain in these cases—cancer of the uterus—was distinctly lessened.

There were no other effects, except, perhaps, diminution of the discharge. Both were neglected cases and quite inoperable. Dr. Stone highly approved of the use of radium in proper hands upon suitable cases; there is no one better qualified to use radium than Dr. Abbe.

Dr. Abbe said, in reply to Dr. Metzerott's remarks, that they were not in accord with the literature, in which may be found reports of many cures effected by radium, among them sixty cases of skin cancer definitely cured. The analgesic effect is one of the most important results. With reference to Dr. Reyburn's appeal for the direction of the treatment to the cause, Dr. Abbe called attention to the trypsin treatment, which is theoretically directed toward the cause of the disease. His experience has not been such as to incline him favorably to it; though further trial may give better results, as the cases heretofore have been late ones, with the system overwhelmed by the poison. Nothing can be claimed for trypsin in late cases; its province is restricted to early ones, in which all of Beard's good results have been obtained. So, also, the ineffective treatment by radium has been due to late recognition of the disease, or the late application of the curative agent. He believes thoroughly in excision when it is possible.

CASE OF PAPILLO-ADENOMA OF THE SIGMOID FLEXURE.*

By A. L. STAVELY, A. M., M. D.,

Washington, D. C.

Mrs. C., white, age 35, of spare physique, gives a distinct history of syphilis, dating back to 1893. As the tumor to be referred to, was not a gummatous growth this history has no significance.

Early in 1906 she had a severe pain low down in the left side of the abdomen and at the same time had a number of small discharges of serum, mucus and blood by rectum. Attacks like this recurred about every six weeks. In July, she had a severe attack lasting two weeks. On this occasion she had nausea but no vomiting, no fever, full regular pulse and constipation.

There was a recurrence in August and one in October. At the date last mentioned, she had an attack of nausea and vomiting,

* Reported, with specimen, to the Medical Society, March 13, 1907.

severe pain in the left side of the abdomen near the navel, marked abdominal distension, rectal tenesmus with small discharge of mucus and blood. The pulse was a little more rapid than normal and the temperature a little higher. She was removed to the Garfield Hospital where I saw her with Dr. Claytor and Dr. Keyser. We made a diagnosis of intussusception from the symptoms and the presence of a mass low in the rectum which was recognized as a prolapsing and invaginated bowel.

An abdominal operation was performed the same day. The intussusception, which extended from the splenic flexure of the colon almost to the anus, was reduced after some effort. After an assistant pushed the apex of the intussuscepted part up with his fingers in the rectum I was able to insert my own below it in the abdomen and gradually reduce it by squeezing the mass upward. There were no peritoneal adhesions, although the bowels must have been invaginated for nearly a week. There was at the distal end of the intussusception a small cicatrix-like thickening about three-fourths of an inch wide, which felt like a healed ulcer. Not wishing to stitch the bowel, for fear of ileus, and not wishing to do a resection in the condition she was at the time, I contented myself with closing the wound.

She had no trouble for three months. Then the symptoms recurred. She was removed to the George Washington Univeisity Hospital, where the second operation was performed in January. The reduction was accomplished in the same way as before. At the site of the previous intestinal thickening was a well-formed tumor about the size of a shellbark. Three inches of sigmoid, including the tumor, were excised and an end-to-end approximation made, two rows of chromatized catgut being used. After the operation there was no nausea, vomiting nor distress. The bowels moved spontaneously on the third day and she made a smooth recovery.

Dr. Claytor said that he had seen this patient, in consultation with Dr. Keyser, some time before she was operated upon. Dr. Claytor found her with anxious expression, pain, fever, feeble pulse, distended abdomen and bloody discharge from the rectum. A diagnosis of intestinal obstruction was made. Dr. Stavely, by rectal examination, found that the obstruction was due to intussusception in the sigmoid. She was successfully operated upon, and the tumor was found at the time, but was not removed, on account of the patient's bad condition and on account of the suspicion that the mass might be syphilitic. She suffered from constipation,

which had to be relieved by purgatives, and the resulting movements were mixed with blood and mucus. Later Dr. Claytor had seen the same patient in the same condition; this attack, as the first, had been induced by a purgative dose of salts. No doubt the traction of the tumor brought on intussusception. This second attack seemed to be relieved by posture and hot enemata, but the condition quickly recurred and demanded the operation at which the specimen was removed.

CASE OF ACUTE THYROIDITIS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

The specimen shows a large right thyroid gland, apparently normal; left thyroid very large and pale, and when fresh was soggy, infiltrated with fluid. All the connective tissues extending down into the superior mediastinum as low as the arch of the aorta were also infiltrated. The left ary-epiglottic fold is swollen, and the trachea contains a membrane and coagulated mucus, in which a culture and microscopic examination failed to find any septic germ.

From a colored woman, age 36, domestic, who was admitted to hospital Feb. 23, 1907, and died next day. She was unable to talk; had the swelling, pain and tenderness over the left side of the neck, and a diagnosis of abscess was made; there appeared also to be tenderness over the gallbladder, but nothing explaining this was found *post mortem*. Temperature 103, pulse 156, respiration 28. Breathing was laborious, even stertorous; lips dry, and covered with sordes; throat obstructed with mucus. This woman had given birth to a child two weeks before admission.

The *post mortem* examination showed a well-nourished body; the neck as described; the heart normal; some oedema of lungs; bronchial glands pigmented; stomach and intestines apparently normal; liver normal except for a small cyst with distinct capsule on its under surface; the spleen also showed a cyst the size of a nut, and was large and soft; kidneys pale; uterus in condition of subinvolution; ovaries large and contained small cysts; corpus luteum in left ovary.

*Reported, with specimen, to the Medical Society, May 1, 1907.

CASE OF COAL-MINER'S LUNG WITH CANCER NODULES.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

The specimens are presented through the courtesy of Dr. and Major Wm. H. Arthur, the attending surgeon at the Old Soldiers' Home, District of Columbia. They consist of the two lungs, quite black in color and full of carbonaceous material. The lungs are firm, in places somewhat contracted, apparently from increase of fibrous tissue ; there are also a few cavities and some nodules of cancer.

The patient was an old soldier, who had worked in the coal mines near Hazleton, Pa., for over 30 years ; his hands and face were disfigured with marks of the coal. He was treated in the hospital of the Home for chronic bronchitis with purulent expectoration, loaded with coal dust ; diffuse, dry and moist rales over both lungs. In October, 1906, a small tumor appeared in the left side of the base of the tongue, steadily enlarged and involved the pharynx, soft palate and left tonsil. He gradually failed, and died March 6, 1907.

Of all the forms of dust that are inhaled, carbon seems the least hurtful ; the miners do not die of the carbonaceous deposits in the lungs, but of some intercurrent disease, preferably some form of pneumonic inflammation due to exposure. The deposit may be looked on, however, as diminishing the resisting power of the lung. All the other forms of dust inhalation are irritating and favor and even cause the supervention of inflammation of the lung. *Siderosis* is the name given to the deposit of particles of metal, usually iron or steel, especially the red oxide of iron. *Chalicosis* is given to the deposit of mineral dust, as in the occupations of stonemason and bricklayer. Then there are various forms of vegetable dust, as, for instance, tobacco and cotton, which also favor inflammation. All these irritating dusts favor especially the development of tuberculosis of the lungs, while *anthracosis*, as stated, is almost innocuous.

Dr. Morris said that he had been bred in a mining community and, of course, had seen many miners. As a rule these men are of powerful physique while health remains, but his impression is

*Reported, with specimen, to the Medical Society, May 1, 1907.

that the average duration of life after the occupation has been begun is from ten to twenty years. He remembered several very strong, vigorous men who succumbed to pulmonary disease after eight or ten years in the mines. The miners work in damp, dark surroundings and usually come out of the mines wet and exhausted; with such conditions it is not to be wondered at that pulmonary disease is prevalent among them.

Dr. A. F. A. King said the fact that miners may breathe in such quantities of coal dust, which so widely permeates the lung tissue, and yet may enjoy long life, suggests the possibility of medication by the inhalation of powders. The fibrosis which seems to be developed by the irritation of the coal dust might be artificially induced so as to promote the natural mode of healing in tuberculosis.

Dr. Chappell said that he had the impression that statistics show that the longevity of miners is not below the average; in England, it has been said, the miners live longer than other classes. Perhaps the equable temperature in which they work may protect them in some measure from disease. It seemed remarkable that a man with such extensive anthracosis, as in the case reported by Dr. Lamb, should have been able to gain entrance to the army after thirty years in the mines.

Dr. Lamb said that some writers hold that the coal dust is not an irritant to the lungs; but that the miners live under such conditions that they are predisposed to other diseases not caused by carbon infiltration.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, April 3, 1907.—Dr. D. K. Shute, President, in the chair; about 80 members present.

The Treasurer presented his report for March, showing receipts, $8.00; expenditures, $108.00.

The Chair recalled a resolution offered by Dr. E. L. Morgan (a bill for the prevention of venereal diseases), from the Committee on Public Health, and referred it to the Executive Committee.

Dr. A. F. A. King resigned from the Committee on the History of the Society, and Dr. D. S. Lamb was appointed Chairman of the Committee.

The following were elected to active membership:

Chas. Walker Allen, Jefferson Medical College, ... 1902
Daniel T. Birtwell, Geo. Washington University, . . . 1900
William Earl Clark, Geo. Washington University, . . . 1904
Richard Lloyd Cook, University of Virginia, ... 1904
Virginius Dabney, University of Virginia, ... 1902
J. S. Arnold, College Physicans and Surgeons, Balto., . 1896
Raymond A. Fisher, Geo. Washington University, . . 1905
Thomas A. Foley, Geo. Washington University, . . . 1905
John H. Holland, Geo. Washington University, . . . 1905
Paul B. Johnson, Georgetown University, ... 1905
Joseph J. Kaveney, Georgetown University, ... 1904
W. H. Littlepage, Geo. Washington University, . . . 1905
Joseph A. Murphy, Geo. Washington University, . . . 1905
Henry P. Parker, Johns Hopkins University, ... 1901
W. Robert Perkins, Geo. Washington University, . . . 1901
John W. Shaw, University of Pennsylvania, ... 1890
Edgar Snowden, Geo. Washington University, ... 1903
William G. Young, Geo. Washington University, . . . 1904
William F. Wagner, University of Pennsylvania, . . . 1890
Prentiss Willson, Georgetown University, ... 1905

Dr. Briggs addressed the Society upon "Some Experiences in the Use of *Bacterial Vaccines* and the *Opsonic Index* (Wright's Method)." Discussed by Drs. Jas. F. Mitchell, E. B. Behrend and Kober.

Wednesday, April 10.—Dr. Shute, President, in the chair; about 50 members present.

On motion of Dr. P. C. Hunt, a committee of five was appointed to meet a similar committee from the Medical Association to consider the relations of the two bodies. The Chair appointed Drs. Acker, Phillips, G. Wythe Cook, Jas. Dudley Morgan and J. D. Thomas.

Dr. J. D. Thomas presented specimens of organs from a case of *cerebro-spinal meningitis.*

Dr. I. W. Blackburn read the paper for the evening. Subject: "Hydrocephalus." Discussed by Drs. Frank Baker, Vaughan, D. S. Lamb and Abbe. See page 209.

Dr. Claytor reported a case of epidemic *cerebro-spinal menin-*

gitis; Dr. Frank Leech, a case of the same disease; Dr. Hardin, a case of pneumococcic cerebro-spinal meningitis; and Dr. J. D. Thomas, a case of cerebro-spinal meningitis, the exciting organism not isolated. Discussed by Drs. Nichols, A. F. A. King, Woodward and Pryor.

Wednesday, April 17.—Dr. Shute, President, in the chair; about 130 members and others present.

Dr. Halsted, of Baltimore, addressed the Society on the "Surgery of *Exophthalmic Goiter* and the *Parathyroid Bodies.*" Discussed by Drs. J. Ford Thompson, Reid Hunt, Mitchell, Balloch, Jas. Kerr and A. F. A. King.

On motion of Dr. Cook, a rising vote of thanks was given Dr. Halsted for his address.

Wednesday, April 24.—Dr. Shute, President, in the chair; about 65 members present.

The Chair announced the appointment to the Committee on the Relations of the Medical Society and the Medical Association of Drs. Mackall and Chappell, vice Drs. Cook and Thomas, declined to serve.

Dr. Abbe read a paper on "Some Cases Treated by Radium." Discussed by Drs. Metzerott, O. Wilkinson, Fremont-Smith, Reyburn and I. S. Stone. See page 233.

Dr. Macatee read a paper on "The Prognostic Significance of the *Widal Reaction.*" Discussed by Drs. Acker, Randolph, Kober and Parker.

WASHINGTON MEDICAL ANNALS.

Journal of the Medical Society of the District of Columbia.

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EDITORIAL COMMITTEE.

D. S. Lamb, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W.
Murray Galt Motter, A. M., M. D., . . . 1841 Summit Place.

Editorial.

THE PERSONAL HISTORIES OF MEMBERS.

In the latter part of September, 1906, a blank form of request for information was sent to each active member of the Society, the form to be returned, filled out, to the Historical Committee. Many members have thus far paid no attention to the request. In some cases similar blanks have been sent a second time, asking for definite facts; some of these have been returned, others have not.

The Committee wishes to have it distinctly understood that in the forthcoming "History of the Society" the personal records of members will appear, and these records will be based partly on the records of the Society, partly on published biographical sketches, and partly on the statements of the members themselves. If the Society record in any case is meager, if there is no published sketch, and if the member makes no written statement, it is obvious that the record in his case, in the "History" will be incomplete; but the fault will not be with the Committee. It is hoped, therefore, that those members who have so far neglected the matter will promptly attend to it; there is such a thing as a "last call to dinner."

It may be added that the Committee has consulted the following publications, namely: *Who's Who in America; American Men of Science; Atkinson's Biographies*, 1874 and 1880; *Stone's ditto*, 1894; *Watson's ditto*, 1896; *Washington Post* History of Washington, 1904; *Twentieth Century Biographical Dictionary*, 1904; and some minor publications.

Dr. Robert A. Marmion, Medical Director U. S. Navy, and a member of this Society by invitation, died June 8, 1907, in this city.

PHOTOGRAPHS OF MEMBERS.—So far, eighteen "groups of eight" have been reproduced in halftone. These groups are made up according to the year of accession of the members to the Society. The completion of this part of the work is delayed by the failure to receive certain photographs that are necessary to make up the remaining groups. If those members who have thus far not responded to the request of the Committee will attend to the matter at an early date, the grouping will be greatly facilitated.

Neither the Committee nor the Society has any understanding with any photographer as to furnishing photographs of members.

The Committee would like very much to secure the loan of photographs of members who are deceased or absent from the city; these likenesses will be returned as soon as the halftones are made. Some members have already made such loans, and the Committee herewith extends its thanks for the courtesy.

THE FIFTY-EIGHTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION.

In his presidential address, Dr. Bryant sounded what were the keynotes of the session: organization, education and a saner therapy. The rumored raids upon the administration, heralded by special editions of some of the commercialized journals, proved to be but flashes in the pan which served only to reveal the strength of the Association, the wisdom and integrity of its leaders, and the awakened sense of responsibility and loyalty on the part of the profession at large. In the House of Delegates, two of the four topics especially dwelt upon by the retiring President, Dr. Mayo, were the report of the Council on Medical Education and the work of the Council on Pharmacy and Chemistry. These two Councils were commended as well by the Board of Trustees.

An item of the utmost importance was the endorsement of the proposition to establish, under the auspices of the American Medical Association, a Board of Public Instruction. The committee which had this matter under consideration presented a report showing the interest and promise of support of some of the most eminent educators and journalists in the country. When, by some such means as is there outlined, we shall be able to edu-

cate the general public to the aims, needs, and possibilities of the medical profession, more will have been accomplished toward a solution of the many and great problems with which we are confronted than by all the laws yet enacted. Laws which lack the support of public opinion, lack also that inherent force needful for their complete and successful administration.

The By-Laws were so amended as to provide for Associate Members, to be nominated by the officers of a section and elected by the House of Delegates, and Invited Guests who, upon invitation of the general officers or the officers of a section, shall enjoy the privileges of membership for the annual session to which they are invited.

A provisional scheme was outlined for the formation of Branch Associations. In forming these Branch Associations, the initiative will, of course, be taken by the several State Associations. According to the scheme outlined, the District of Columbia would be included in the Atlantic Coast Branch together with Pennsylvania, Maryland, Delaware, Virginia, North Carolina, South Carolina, and Porto Rico. The formation of a Southern Association was announced, including Georgia, Florida, Alabama, Mississippi, Tennessee and Louisiana. In order to complete the scheme outlined in the House of Delegates, it will only be necessary to add Arkansas to fill the list of the Southern and Gulf Branch. The existence of a Southwestern Branch was also announced, but the list of members was not given.

The matter of a Department of Public Health was left to the Committee of One Hundred, to which confidence and support was pledged. Attention was called to the good work of the physicians now in Congress, and an earnest plea made that the physicians of the country may have a more numerous representation in Congress, somewhat in conformity with the practice of the European countries. The urgent need of greater uniformity in our State laws was presented with great emphasis, sufficient reason being found in the effective work of the National Association of Osteopaths and the National Proprietary Association. A lively discussion was precipitated on the question of the reestablishment of the Army canteen, but the House of Delegates concluded that as a matter of expediency,, it could not recommend its reestablishment.

The Scientific Exhibit was of great interest and excellence,

though not quite so large, for obvious reasons, as that of last year. Of great importance was the exhibit prepared by the Philadelphia Branch of the American Pharmaceutical Association showing side by side a large number of proprietary preparations and their Pharmacopoeial congeners. The members of the Philadelphia Branch were well represented at all times, and had always grouped about them a number of greatly interested physicians from all parts of the country.

Washington was well represented at this meeting of the Association. With Doctor Acker in the House of Delegates, Doctor Bovée Chairman of the Section on Obstetrics and Diseases of Women, and the following men on the programs of the various Sections: I. S. Stone, S. S. Adams, Ashford, J. F. Mitchell, J. T. Johnson, G. T. Moore, Reid Hunt, Wiley, Rosenau, Bryan, Wells and C. W. Richardson. On the Board Walk were to be seen C. W. Allen, Barnes, Barton, Butler, Hagner, L. B. T. Johnson, Kober, R. S. Lamb, G. L. Magruder, Miller, Moran, Sprigg, Thomas, Vale, and others. [M. G. M.]

NOISES IN CITIES.

Prof. Edw. S. Morse, of Salem, Mass., has an interesting and instructive article in *Modern Medicine* of May, 1907, on "The steam whistle a menace to public health." He says that it has been shown by expert medical testimony that the steam whistle is positively injurious to health. He says, further, that since many of the largest manufacturing establishments in the country carry on their work without the use of the whistle, and many of the largest freight yards in the country have abandoned its use, and thirty towns and cities of Massachusetts, and a number of cities elsewhere, as Detroit, Cleveland and Atlanta, have stopped the use of the whistle within corporate limits, we are justified in claiming that its use is not necessary and should be abated in all cities, towns and villages.

At Lowell, Mass., are ten large corporations that employ 18,000 persons. These corporations do not use the steam whistle. Neither does the great Warren Paper Mills at Portland, Maine, although employing between 1,300 and 1,400 men, divided in three shifts a day. The Pope Manufacturing Company employs 1,000

or more, and the Natural Food Company, Niagara Falls, a large number, and yet do not use the whistle. On the other hand, a file factory, employing one man and two boys, blows a whistle "that not only disturbs the entire neighborhood, but wakes up invalids in the next county."

He adds that in European countries the use of the whistle, even where trains at high speed cross roads at grade, is forbidden.

The city of Cleveland, Ohio, forbids the blowing of whistles by railroad engines, except when it is necessary to apply the brakes in time of danger; and by steam vessels, except as a danger signal, or under circumstances prescribed by the rules of navigation, or the laws and regulations of the United States requires the use; also stationary engines, except in case of fire or collision, or other imminent danger.

Detroit, Mich., has similar regulations. It costs an offender $50 or imprisonment for thirty days to blow a locomotive whistle within the city limits of Atlanta, Ga.; and the same is true of Newcastle, Penn.

A verdict of $61,902.60 damages was given by the jury in a case against the Boston Elevated in a suit brought by the Columbia Theater, on the ground that the noise of the trains ruined the theater.

The use of the steam whistle depresses the value of abutting and near-by property and prevents building, or occupying premises already built.

As to the medical side, the following may be stated: The blowing of the steam whistle works a detriment and misery to thousands of invalids, the sick, the dying, the nervous and overworked; is one cause of nervous prostration, which is a disease of cities. Not only does the noise irritate the auditory apparatus but harms the brain and nervous system. The noise is a menace to public comfort, sleep and health. The sick and convalescent are injured. One has no more right to throw noises into a house than to throw stones. A certain quantity of nerve energy is required to resist noises, and when these are abnormally great they make a great drain on the nervous system.

In thousands of cases persons are being made ill, are committing slow suicide, or are being slowly and painfully killed by useless noises.

Political posters were found on the walls of the buried city

Pompeii in which the main plank for the candidate's platform was the suppression of street noises.

Carlyle says: "That which the world torments me in most is the awful confusion of noise. It is the devil's own infernal din all the blessed day long, confounding God's work and His creatures. A truly awful, hell-like combination, and the worst of it is a railway whistle like the screech of 10,000 cats, and every cat of them all as big as a cathedral."

There are comparatively few factories in this District, and therefore the people of this city are not much troubled with the whistling of stationary engines. At the same time we believe that the experience elsewhere has demonstrated that the use of the whistle to call employees to work or to cease therefrom is entirely unnecessary, and should therefore be stopped. The experience elsewhere would seem also to establish the fact that the use of the locomotive whistle in this District is unnecessary, and, unless absolutely required by law or municipal regulations, should also be stopped. The use of the steam whistle on boats does not appear to be open to so much objection. But the practice of inaugurating some holidays and festivities by the promiscuous blowing of all the whistles in and about a city, sometimes at the dead of night, is without sense or justification.

There is another form of noise that, perhaps, is even worse than the steam whistle, namely, that from exploding firearms and fireworks; worse because of the nature, so sudden and unexpected and intensely penetrating. Although the use of fireworks is restricted theoretically to what we call Independence Day, as a matter of fact for sometime before that day there are many sporadic cases. Every physician is well aware how much distress is caused by this noise. The municipal authorities undertake to limit the noise near hospitals and residences of the sick, but with only partial success. There is little, if any, patriotism in the custom; as practiced, it is mostly the outcome of the natural bent of an undeveloped nature—the growing boy and the half-developed man, who delight in nothing so much as noise. We think that this form of noise could be and should be stopped.

Dr. John Speed McLain, a member of this Society since April 6, 1892, died June 2, 1907. An appropriate notice will appear in the next Annals.

THE PRESIDENT'S HOMES COMMISSION.

A circular has been issued, addressed to physicians, under date of June 20, stating that "the 'Committee on Social Betterment' of 'The President's Homes Commission' believes that an investigation into the prevalence of certain diseases and morbid habits will prove a very useful medico-sociological study and possibly suggest important preventive measures. For this purpose will you kindly co-operate with the Commission, which serves without pay, and furnish the desired information, for which full credit will be given you in our Report to the President. It is respectfully suggested that the collection of your memoranda begin July 1, 1907, and end December 31, 1907, after which date kindly transmit the results of your observation to the undersigned." [Dr. Geo. M. Kober, 1600 T Street, N. W.]

Then follows a series of questions in regard to the prevalence of venereal diseases, the alcohol and drug habits and sexual hygiene. Any physician desiring a copy of the circular can obtain the same from Dr. Kober.

San Francisco.—To the Medical profession of the District of Columbia, Virginia, West Virginia and North Carolina:

The medical profession of San Francisco lost its medical library, the San Francisco County Medical Society Library, in the fire in the Spring of 1906. Most of the physicians also lost whatever private libraries they had succeeded in collecting. A committee has been appointed by the American Medical Association and by the Association of American Physicians to collect and send books to San Francisco, both for the library and for private individuals when duplicate copies are sent on.

Will you send to Dr. George M. Kober, 1600 T Street, Washington, D. C., any medical books of value or bound volumes of journals which you can spare? Fairly recent editions of standard text books, foreign text books or bound journals (French, German and Italian), hospital reports, monographs of all sorts, books on special subjects, old classics (*e. g.* Trousseau, Charcot) and the Sydenham Society publications are especially desired.

Acknowledgment of all that is received will be made through the medical journals, and the books will be packed and shipped as promptly as possible.

THE MEDICAL EXAMINERS OF THE SOCIETY.—The book kept by the Board of Medical Examiners up to 1869 is missing. If any member knows where it is or is able to suggest where it is, the Historical Committee would be obliged to him for information.

Reprints from the ANNALS containing an account of the dinner to Dr. J. Ford Thompson can be obtained from the printer, R. Beresford, 618 F Street, N. W., or from Dr. D. S. Lamb, at ten cents a copy.

The Editorial Committee is prepared to publish abstracts of the proceedings of the other medical societies of the District. If these abstracts are typewritten, it will very much lessen the labors of the Committee.

U. S. BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.—A board of officers will be convened to meet at the Bureau, 3 B street S. E., Washington, D. C., Monday, July 15, 1907, at 10 o'clock A. M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of reputable medical colleges, and must furnish testimonials from responsible persons as to their professional and moral character.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS.—This Congress will meet in New York City Sept. 9th to 14th, 1907. Programs will be sent and information in regard to accommodations, registration, &c., on application to Dr. John A. Fordyce, Secretary-General, 80 West Fortieth Street, New York City.

Dr. FREDERICK F. RUSSELL, Captain and Assistant Surgeon, U. S. Army, is acting as Curator of the Army Medical Museum during the absence from sickness of Dr. James Carroll, Major and Surgeon, U. S. Army.

Manuscripts of Articles written by members of the Society, but not read at its meetings, have several times been offered to the Editorial Committee for publication. The Committee has felt compelled to decline publication until after such papers should be read, or unless the author was willing to pay for publication at the estimated rate, namely, $1.50 per page. Several papers have thus been published at the expense of the authors. Of course if the Society authorizes publication without charge, of papers not read before it, the Committee will gladly obey instructions.

Medical Miscellany.

Therapeutic Society, District of Columbia.—Meeting June 8, 1907, at the usual place.—Dr. Henry A. Robbins read a paper on "Saturnism and other Harmful Results from the Use of Cosmetics." The paper recited the histories of a number of patients who showed toxic symptoms from using face lotions that contained more or less soluble preparations of sulphur, lead, bismuth, arsenic, mercury bichloride, &c. Discussion by Drs. Reyburn, Dufour and Kolipinski, each of whom also recited cases.

An appropriate report was made regarding the death of Dr. John Speed McLain, and resolutions were adopted.

A. J. Hall.

The Medical Society of Georgetown University.—This Society was organized April 6, 1907, by electing the following officers for one year: President, Dr. Percy Hickling; Honorary President, Dr. Warwick Evans; Vice Presidents, Drs. John F. Moran, S. S. Adams, E. B. Behrend, R. A. Hamilton, Harrison Crook, Loren Johnson; Recording Secretary, Dr. Wilfred M. Barton; Corresponding Secretary, Dr. Llewellyn Eliot; Treasurer, Dr. Louis A. Johnson; Business Committee, Drs. Charles M. Hammett, Walter A. Wells, Roy D. Adams, Frederick Sohon, George Barrie, J. S. Wall, J. M. Heller, Robert Oleson, L. Eliot; Historian, Dr. Francis A. St. Clair.

The meetings will be held on the third Saturday of each month, when pathological specimens will be presented and papers read and discussed. After the meeting a luncheon will be served.

The first regular meeting was held May 11. Dr. G. L. Magruder reported a case of asthma treated with adrenalin.

Dr. Hickling, at the request of Dr. Kober, spoke of the electrotherapeutic apparatus at the Georgetown University Hospital and

stated that it was the most complete electro-therapeutic outfit in the city.

Dr. Frank Baker read a paper, "Practical Anatomy as an Aid to the Alumni." Dr. Baker illustrated his paper with sections of the body, which had been prepared and were the property of the Medical Department.

Dr. Llewellyn Eliot read a paper, "The History of the Foundation of the Medical Department of Georgetown University."

LLEWELLYN ELIOT.

The Medical Colleges of the District of Columbia and the Registration Boards.—The *Journal of the American Medical Association* for May 25, 1907, publishes some lists showing the results of examinations by the boards of registration throughout the United States. From these lists the following statements in regard to the medical colleges of this District are extracted:

Of the physicians examined during the calendar year 1906, there were from George Washington University, 80 persons; of whom 61 passed, 19 failed; per cent. of failures, 23.7. Georgetown University, 37 persons; of whom 28 passed, 9 failed; per cent. of failures, 24.3. Howard University, 37 persons; 28 passed, 9 failed; per cent. of failures, 24.3.

Of those examined in 1906 the following had graduated after 1900: George Washington, 76; 57 passed, 19 failed; per cent. of failures, 25. Georgetown, 36; 27 passed, 9 failed; per cent. of failures, 25. Howard, 34; 27 passed, 7 failed; per cent. of failures, 20.6.

A separate list is also given of those physicians examined who had graduated before 1901; but as there are only 8 persons altogether for the three schools in the District, it is evident that a single failure gives a disproportionately heavy percentage. For instance, fifteen colleges in this list show 100 per cent. of failures, including the Atlanta College, Maryland Medical, University of Michigan, University of Missouri, Cleveland College of Physicians and Surgeons, Toledo Medical, South Carolina Medical and Tennessee Medical.

A very interesting comparative showing is made of the failures in and outside the District:

RESULT OF EXAMINATION FOR REGISTRATION.

Name of University.	Total examined.	In the District.			Outside the District		
		Passed.	Failed.	Per cent. of failures.	Passed.	Failed.	Per cent. of failures.
George Washington	76	30	16	34.8	27	3	10
Georgetown	36	11	7	38.9	16	2	11.1
Howard	34	5	4	44.4	22	3	12

Will some one please explain why the graduates of these colleges who take examinations elsewhere are so much more successful than those who take examinations in the District?

American Medical Association.—At the Atlantic City Session of the Association the following resolutions, regarding the work of the Council on Pharmacy and Chemistry, were presented by the Reference Committee on Reports of Officers and were unanimously adopted by the House of Delegates.

"WHEREAS, The Council on Pharmacy and Chemistry, after examining many hundreds of preparations, has officially announced its approval of a large number of such preparations; and

"WHEREAS, We believe that the editors of many medical journals in this country, both official organs of State Associations and privately owned journals, are desirous of co-operating in the work of freeing the medical profession from the nostrum control; therefore, be it

"*Resolved*, That this Association most earnestly requests all medical journals to refuse to aid in promoting the sale of preparations which have not been approved by the Council, by refusing advertising space to such preparations; and be it further

"*Resolved*, That we most earnestly request the moral and financial support of our members for those medical journals, whether privately owned or controlled by medical organizations, which disregard commercialism and stand firm for honest and right dealing, thus sustaining the Council in its greatest work for the medical profession."

Medical Association of the District of Columbia.—An adjourned meeting of the Association was held, May 14, in the West Hall of Columbian College; about 65 members were present.

The committee previously appointed to confer with a similar committee of the Medical Society in regard to their relations with the American Medical Association reported as follows: 1. That the Regulations of the Medical Association be so amended as to provide for the consideration of all matters relative to questions of legislation on medical subjects both general and local. 2. That the Medical Association be so constituted as to make it a scientific body sufficiently to have it conform to the requirements of the American Medical Association. The report was adopted. The President was directed to appoint a committee to prepare such amendments to the Regulations as may be necessary to make them conform to the Regulations of the American Medical Association and to report at the next stated meeting. The President appointed the following Committee: Drs. S. S. Adams, G. Wythe Cook, J. D. Morgan, T. N. McLaughlin, H. T. A. Lemon.

The proposed amendment relative to the admission to membership of physicians employed as such in the scientific services of the U. S. Government was defeated by a decisive vote.

A new Fee List, reported at the last regular meeting as an amendment to the Regulations, was adopted, ordered to be printed and distributed to members. L. H. REICHELDERFER.

Society of Ophthalmologists and Otologists of Washington, D. C.—Regular meeting May 17, 1907, at the office of Dr. A. B. Bennett, Jr. The following were elected officers for the ensuing year: D. K. Shute, President; H. A. Polkinhorn, Vice President; R. S. Lamb, Secretary and Treasurer; H. S. Dye and O. A. M. McKimmie on the Executive Committee.

J. J. Richardson reported a case of *pseudo-membranous rhinopharyngitis*. In the discussion Dr. Bennett said that the diplococcus and staphylococcus were usually found on microscopical examination. Dr. Butler said that he had found that the disease usually disappeared under the use of silver nitrate; one of his patients had suppurative otitis media and also a patchy throat; of three cultures taken one showed the diphtheria bacillus.

Dr. McKimmie reported a case of *Menière's disease* as described by Menière in 1861; McKimmie first saw the woman six weeks after its appearance; there were three kinds of subjective noises, one that of tearing a sheet. She had had morning nausea, vomiting and was unable to get about; she was absolutely deaf one week prior to examination. When examined she could hear all of the series of tuning forks and a moderate voice; bone conduction returning; slight dizziness. He gave syrup of hydriodic acid. Dr. Fox reported another case which had been improving since September, 1906. Dr. Polkinhorn reported a case that was helped by pressure on the carotid artery; no bone or air conduction at first examination; the disease yielded under potassium iodide but recurred on its discontinuance. Dr. Richardson reported a case due to syphilis that entirely cleared up under the use of the iodide. Dr. Dye reported another case in which electricity was used without benefit, but which was cured by prolonged treatment.

Dr. Shute reported a case of *argyrosis* due to injection of argyrol in dacryocystitis; the tissues were black and blue under the lower lid for ten months, and continued so; and another case in gonorrhoeal ophthalmitis from the use of silver nitrate and agyrol prolonged. Dr. Souter recalled another case due to a lacrymal injection of argyrol, and one of corneal ulcer in which argyrol in solution caused corneal discoloration. Dr. Polkinhorn said that there must have been disintegration of the wall of the sac or duct to allow passage of the solution into the tissues. He does not use the Anel syringe; Myles Standish had written on argyrosis in dacryocystitis and conjunctivitis. Dr. Butler cited de Schweinitz's article on argyrosis; Dr. Butler used a dental syringe with rubber bulb. Dr. Muncaster had under treatment an old man who had argyrosis for three years which then cleared up.

R. S. LAMB.

Health Department, District of Columbia.—

Memorandum showing the relative prevalence of certain contagious diseases in the District of Columbia from March 1 to June 1, 1906, and the same period of 1907.

The Act requiring cases of measles, whooping cough, chicken-pox and epidemic cerebro-spinal meningitis to be reported to the Health Department was not put into operation until after April 8, 1907. This statement, therefore, in so far as it relates to these diseases, covers the period from April 8, to June 1, 1907.

DIPHTHERIA.

1906.			1907.		
Cases on hand March 1	32		Cases on hand March 1	25	
Cases reported from March 1 to June 1	100		Cases reported from March 1 to June 1	74	
Cases discharged, recoveries		113	Cases discharged, recoveries		86
Cases discharged, deaths		12	Cases discharged, deaths		6
Cases on hand June 1		7	Cases on hand June 1		7
Total cases	132	132	Total cases	99	99
*Per cent. of fatal cases		9.6	*Per cent. of fatal cases		6.5

SCARLET FEVER.

1906.			1907.		
Cases on hand March 1	30		Cases on hand March 1	33	
Cases reported from March 1 to June 1	87		Cases reported from March 1 to June 1	50	
Cases discharged, recoveries		68	Cases discharged, recoveries		72
Cases discharged, deaths		4	Cases discharged, deaths		...
Cases on hand June 1		45	Cases on hand June 1		11
Total cases	117	117	Total cases	83	83
*Per cent. of fatal cases		5.6	*Per cent. of fatal cases		0.0

TYPHOID FEVER.

1906.			1907.		
Cases on hand March 1	29		Cases on hand March 1	54	
Cases reported from March 1 to June 1	97		Cases reported from March 1 to June 1	91	
Cases discharged, recoveries		60	Cases discharged, recoveries		81
Cases discharged, deaths		18	Cases discharged, deaths		16
Cases on hand June 1		48	Cases on hand June 1		48
Total cases	126	126	Total cases	145	145
*Per cent. of fatal cases		23.1	*Per cent. of fatal cases		16.5

SMALLPOX.

1906.			1907.		
Cases on hand March 1	21		Cases on hand March 1	0	
Cases reported from March 1 to June 1	43		Cases reported from March 1 to June 1	1	
Cases discharged, recoveries		35	Cases discharged, recoveries		1
Cases discharged, deaths		2	Cases discharged, deaths		0
Cases on hand June 1		27	Cases on hand June 1		0
Total cases	64	64	Total cases	1	1
*Per cent. of fatal cases		5.4	*Per cent. of fatal cases		00

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

From April 9, 1907, to June 1, 1907.

Measles.			Whooping Cough.		
Cases on hand April 9, 1907,	.....	.....	Cases on hand April 9, 1907,	.....	.....
Cases reported from April 9 to June 1	112	.....	Cases reported from April 9 to June 1	92	.....
Cases discharged, recoveries	.....	35	Cases discharged, recoveries	.....	5
Cases discharged, deaths	.....	.....	Cases discharged, deaths	.....	3
Cases on hand June 1, 1907	.....	77	Cases on hand June 1, 1907,	...	84
Total cases	112	112	Total cases	92	92
* Per cent. of fatal cases	.....	.....	* Per cent. of fatal cases	.....	37.5

Chickenpox.			Epidemic Cerebro-spinal Meningitis.		
Cases on hand April 9, 1907,	.....	.....	Cases on hand April 9, 1907	.....	.....
Cases reported from April 9 to June 1	104	.....	Cases reported from April 9 to June 1	4	.....
Cases discharged, recoveries	.....	41	Cases discharged, recoveries	....	.....
Cases discharged, deaths	.....	.....	Cases discharged, deaths	.....	3
Cases on hand June 1, 1907	.....	63	Cases on hand June 1, 1907.	.....	1
Total cases	104	104	Total cases	4	4
* Per cent. of fatal cases	.....	.....	* Per cent. of fatal cases	....	100

* The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

The large percentage of fatal cases of whooping cough is due to the fact that all fatal cases of this disease are necessarily promptly reported, while cases that recover can and do run their course, in some instances without being reported to the Health Department or being discovered by it.

Dr. Eugene S. LeMerle was appointed an inspector in the contagious disease service on April 13, 1907, vice Dr. C. Norman Howard, resigned.

Dr. Howard W. Barker, Mr. Frank L. Wollard and Dr. Andrew J. McIntyre, Sanitary and Food Inspectors in the service of the Health Department, have resigned to accept position with the Bureau of Chemistry of the Department of Agriculture.

Mr. John S. Gallagher, Mr. Edmund S. Horgan and Mr. Charles L. Van Doran have been appointed to succeed them. These three inspectors are appointed as a result of having passed an examination, held in August last, of applicants for such appointments. Mr. Gallagher is a registered pharmacist, but has recently been engaged in the real estate business. Mr. Horgan is in the third-year class at the George Washington Medical School and has been employed in the National Museum.

WILLIAM C. WOODWARD, M. D., *Health Officer.*

Frank G. Ryan elected President of Parke, Davis & Co.—The presidency of Parke, Davis & Co., left vacant by the death of Theodore D. Buhl, has been filled by the advancement of Vice President and Secretary Frank G. Ryan.

Born in 1861 in Marcellus Falls, New York, Mr. Ryan was educated in the public schools of Elmira, and then spent three years in the well-known pharmacy of Brown & Dawson in Syra-

cuse. In 1882 he entered the Philadelphia College of Pharmacy and was graduated two years later at the age of 23. Two or three years were next spent in various Philadelphia stores, and then he was made assistant professor of pharmacy in his alma mater. In 1898 he was given charge of the course in commercial training then established in the P. C. P., and in the meantime he had been made lecturer on pharmacy in the Woman's Medical College of Philadelphia. In June, 1900, Professor Ryan resigned all his connections in Philadelphia and went into the house of Parke, Davis & Co.

The Interstate Medical Journal (St. Louis).—This journal announces the purchase of the *St. Louis Courier of Medicine*, one of the oldest medical journals in the West, and its consolidation with the *Interstate* on July 1st. The *St. Louis Courier of Medicine* was established in 1879 by an association of prominent St. Louis physicians. This merger removes from the field an old and highly esteemed contemporary, and its consolidation with the *Interstate* adds strength and prestige to that periodical. This is the fourth medical journal that has been purchased and absorbed by the *Interstate* during the past few years. O. F. Ball.

Howard University Medical Department and Freedmen's Hospital.—The Department closed its 39th annual session May 29, 1907, when the Commencement was held. During the session there was an attendance of 189 in medicine, 46 in dentistry, and 49 in pharmacy; of these, 44 graduated in medicine, 13 in dentistry and 11 in pharmacy. The new hospital buildings are approaching completion and it is expected will be occupied about November 1.

A number of additions have been made to the Medical Faculty: Dr. J. Taber Johnson will give special lectures on Obstetrics and Gynecology; Dr. W. C. Woodward will lecture on Medical Jurisprudence; Dr. H. A. Fowler on Genito-Urinary Diseases; Dr. R. S. Lamb on Ophthalmology in place of Dr. Belt, deceased; Dr. Marcus W. Lyon is an Associate Professor of Physiology; Dr. Chas. W. Bowker, Associate Professor of Bacteriology; Dr. A. J. Hall is Assistant in Dermatology and Syphilology; Dr. W. A. Wells, Assistant in Pathology; Dr. J. F. Johnson, Assistant Demonstrator of Anatomy. D. S. Lamb.

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WASHINGTON MEDICAL ANNALS

THE NATURE OF INSANITY.*

By WM. A. WHITE, M. D.,

Superintendent of the Government Hospital for the Insane,

Washington, D. C.

Members of the Society: In appearing before you for the first time in the capacity of an essayist, I feel that I should present a subject as broad as possible in its bearings on the general matter of psychiatry. As most of you probably have little occasion to acquaint yourselves with the problems in this department of medicine, such a paper would naturally have a wider field of interest while at the same time serving as a means for what might be called a sort of declaration of faith on my part.

The subject I have chosen is certainly sufficiently broad in its scope to answer all these requirements, and I approach it with some considerable temerity. I do not, however, pretend that its discussion will result in any finalities. I shall only try to indicate in a general way what the modern trend of thought regarding it seems to me to be. To do this it will be necessary to approach it from different directions.

The word *insanity* is negative in its connotation and means an absence of sanity. To understand its meaning it then becomes necessary to understand the normal, sane, mind.

For our purposes the mind may be considered as an adaptive mechanism. While the functions of the lower nerve centers are, among others, to adjust the interactions between the several organs of the body, the function of the mind is to regulate and control the actions of the individual as a whole so as to best serve his interests in his relation with his environment, in other

*Read before the Medical Society, May 29, 1907.

words, to bring about an adjustment of the individual to his environment.

In order that this adjustment of the individual to his environment may take place three things are necessary: 1. A knowledge of the environment must be gained. 2. This knowledge must be associated and brought into relation with previous experiences. 3. It must be transformed into the appropriate actions.

In other words, the sense organs bring sensations to the brain, which being elaborated there into perceptions give the individual a certain information as to his immediate surroundings; these perceptions are associated with other materials of knowledge which they find in the mind on their arrival; from these associations issue certain judgments and motives which lead to actions, and the sum total of the actions of the individual constitutes *conduct.*

In this brief description it is important to emphasize that mental processes are not separate and distinct in any sense, but only parts of a larger whole. The old psychology conceived of mind as composed of a number of cubby holes in each one of which was pigeon-holed a special faculty, feeling, thinking, volition, each one of which was quite distinct from all the others. Obviously, however, this is not so. Mental processes, from their incidence in sensation to the release of the motor responses constituting conduct, are conceived to have as their physical substratum a continuous neural process. The process, although differently named in different parts of its course, for convenience of designation, is a continuous one, and volition, intelligence, judgment, far from being independent forces acting from without and directing, are only different aspects of the same process from the psychological view-point. This conception of the continuity of mental processes is most important for a correct understanding of insanity, and a lack of its appreciation has led to many misconceptions.

We have seen that the function of the mind is to adjust the individual to his environment. Of course in general such an adjustment constitutes life itself, which, as defined by Spencer, is "the continuous adjustment of internal relations to external relations." But whereas the lower nerve centers subserve the adjustment of the various organs with one another and with external conditions, the higher centers, the physical substratum of

mind, subserve the adjustment of the individual as a whole to external conditions. It therefore follows that the most full and complete mental life is that which adjusts the individual most completely to the conditions of his environment : the best mind, that which is capable of the greatest latitude of adjustment, that enables the possessor to fill any position in life in which he may be placed. And conversely, the poor mind, the narrow mind, permits only a limited adjustment, either limited in the particular position in life occupied by the individual or limited as to its possibilities of scope, or both.

Whatever may be the limits of adjustability for the individual, any disorder of the mental processes must necessarily interfere with it. But, as we have no absolute standard of comparison, we are forced to compare the individual's present condition with his condition in the past, with his usual condition.

All degrees of adjustability are found in different persons, and the most limited may, for the individual concerned, be normal. The interference with the adjustment of the individual with his environment is, therefore, a disorder, in so far as it is a departure from his previous, his usual condition, and what is important for our consideration at this point is that it is a disorder of conduct. Insanity then might be said, from this point of view, to manifest itself by disorder of conduct, and Mercier goes so far as to hold that by disorder of conduct only can we know of its existence. * " Disorder of mind without disorder of conduct, if it were possible, would be unimportant; if it were important, would be unrecognizable."

On the other hand Wernicke emphasizes the disorder of the mind by holding that it is in what he calls the intrapsychic region that the real disorder occurs. It is here in this great associational region of consciousness that the conditioning circumstances of conduct really arise, and he has with much justice said that insanity is a disease of the †" organ of association."

The relation of the alienist to the problem as thus defined is very well put by Mercier :‡

" When the student of medicine passes to the study of insanity, he crosses a scientific frontier, and enters an entirely new province of knowledge. Hitherto his purview has been limited to the

* Mercier : A Text-Book of Insanity.
† Wernicke : Grundriss der Psychiatrie. ‡ Mercier : op cit.

processes that go on within the body, and whatever references he had to make beyond that field were indirect and of secondary import. He needs to know the structure and functions of the several organs of the body, and, when any function is disordered, his calling is to take measures to readjust the bodily processes to one another so that they may work in harmony again. He has, in short, to maintain the organism in a fit state to do its work, whatever that may be, but with the doing of the work he has no concern. What the work may be, and with what efficiency it may be performed, is no concern of his, except in so far as these things may affect the general capacity of the organism to continue its existence. His position towards the patient is the position of the shipwright and the engineer towards the vessel on which they are engaged. Like them, he must be thoroughly acquainted with the structure and function of every part, and, like them, he must be upon the watch to repair the structure and correct the function, when the one is damaged or the other is at fault; but with the ship's course he has nothing to do. That is a matter altogether beyond his province. When the student oversteps the bounds of medicine to enter upon the study of insanity he leaves the engine-room for the quarter-deck. He is no longer directly concerned with the integrity of the structure or the efficiency of the engines. His function now is to set the ship's course, to note the way in which she comports herself in wind and weather, to study charts and tides, stars and clouds, to watch the barometer and to sound the lead, and generally to relinquish the observation of the ship herself, and to take up that of her relation to the world in which she moves. This is the function of the student of insanity—to study the individual, not *per se*, or *simpliciter*, but in relation to the world in which he exists, and in which he has to maintain his existence."

Thus far, to review our evidence for a moment, we have seen that mental phenomena arise when there is an interplay between the individual and his environment, and these phenomena are considered normal when as a result there takes place an adjustment of the one to the other; that they are considered as abnormal when the result is lack of adjustment.

Insanity is therefore a term which in relation to sanity is as broad as the term disease in relation to health, and can only be defined in the most general terms as resulting from defect in the

relation of these two factors—the individual and his environment. From the standpoint of the individual, which is the only standpoint we can take, this mal-adjustment is manifested as mental disorder—as disorder of function, and must be studied and measured as such to be understood.

If insanity, then, is a condition arising as a result of mal-adjustment between individual and environment we see how absurd some of the views are which grew out of the conceptions of the old "faculty psychology," and neglected to consider the mind as a mechanism of adjustment, all parts of which were interrelated one with another. Perhaps the most widely held of the erroneous beliefs about insanity which continue to evidence the influence of the old psychology is the belief in a monomania or, as it is sometimes referred to, a partial insanity. The belief, in other words, that a person may be insane on one subject and sane on all others. On this point I can do no better than to again quote from Mercier,* who says:

"The delusion is not an isolated disorder. It is merely the superficial indication of a deep-seated and wide-spread disorder. As a small island is but the summit of an immense mountain rising from the floor of the sea, the portion of the mountain in sight bearing but an insignificant ratio to the mass whose summit it is, so a delusion is merely the conspicuous part of a mental disease, extending, it may be, to the very foundations of the mind, but the greater portion of which is not apparent without careful sounding. Precisely how far this disorder extends, beyond the region of mind occupied by the delusion, it is never possible to say; but it is certain that the delusion itself is the least part of the disorder, and, for this reason, no deluded person ought ever to be regarded as fully responsible for any act that he may do. The connection between the act and the delusion may be wholly undiscoverable, as the shallow between two neighboring islands may be entirely hidden by the intervening sea. But nevertheless, if the sea stood a hundred fathoms lower, the two islands would be two mountain peaks connected by a stretch of low country; and, if the hidden springs of conduct were laid bare, the delusion and the act might be found to have a common basis."

And the change in view-point from the autopsy room to the

*Mercier: Criminal Responsibility.

psychological laboratory in the realm of psychiatry is one which has its counterpart in general pathology. Disorder of function must be studied *in vitam*. Here tissue change is no longer the only aim, but the facts of thermo-dynamics, of electro-physics, of osmosis are drawn upon to explain the changes in metabolism, the disorders of function as they are found in the living individual. Similarly in the realm of psychiatry, mental process must be subjected to careful analysis in the laboratory to determine how they have departed from the normal. The *post mortem* findings in a diseased brain can never be any better than anatomical curiosities unless correlated with a most careful and detailed analysis of the functional disturbances during the life of the patient.

From the standpoint of disordered function, insanity is then the expression on the part of the individual of his type of reaction to the conditions of his environment. Insanity cannot be spoken of as a disease any more than hyperchlorhydria, it is but a symptom—a type of reaction, an effort on the part of the individual to meet conditions. It is true that some disease may be at the bottom of the destruction of adjustment; perhaps a disease of the brain such as paresis renders the reactions of the individual inadequate, for we must remember that the brain is just as truly a part of the environment of the mind as the rest of the body, or in fact as anything, even outside of the body. On the other hand, it is quite probable that when the discrepancy between individual and surroundings is very great, we may get sufficient disorder to constitute insanity without disease at all in the sense of tissue changes. In fact a recent English writer claims that many cases of insanity are really but the expression on the part of the patient of an inability to meet conditions: theoretically a change to conditions that, so to speak, would fit the individual would effect a cure. This, perhaps, is carrying the matter too far, and yet we have all seen persons break down in walks of life to which they never should have aspired. Among German authors, however, we find the episodic delirious manifestations of hysteria explained as a reaction on the part of the patient who resorts to a vicarious psychosis as an expression of unsatisfied need, while Janet explains all that multitude of symptoms which characterize psychasthenia by a defect on the part of the patient to accurately comprehend his environment, due to a "lowering of the psychological tension," as he calls it, resulting in a deficiency in the "function of the real."

These seem to me to be excellent examples of what is meant by considering a psychosis as a reaction on the part of the individual.

The term insanity is thus seen to include a great multitude of different conditions—of different sorts of reactions—due to a host of different kinds of causes, and the explanation of the difficulty, in fact the impossibility of classifying mental disorders on any one basis—the etiological, the pathological, the psychological—is at once apparent. It would be just as sensible to try to force under one head all the diseases that might involve the kidney, including sarcoma and tuberculosis, with the nephritides proper.

It is true that the symptoms of mental disorder tend to arrange themselves into groups, but the constancy of these groups is a very variable factor, and, like the epileptologist who no longer speaks of epilepsy as a concrete entity but speaks rather of "the epilepsies," so we are getting away from the idea of distinct, definite psychoses and are using such terms as the dementia paralytica group, the manic-depressive group, the hysteria group, etc. These groups, the so-called clinical types, are not clean cut entities, but are only groups of symptoms which either seem to occur more frequently in certain combinations or else have been more definitely and clearly seen because of the nature of those combinations. In fact, types as such may be said to be in the minority. The great mass of cases seen is in combinations more or less intermediate in character. The conception of types in order to be accurate must be from a broadly biological viewpoint. Types are like species. They have innumerable transition and intermediate forms. It is as if overlooking a vast though young forest. Here and there certain trees, because of their size and prominent location, would stand out distinct from the others. These would at once be picked out by the observer as types, yet the forest as a whole is not composed of these but of the immense number of smaller trees among which these few stand out definitely, and a more detailed study of the majority of the trees of approximately the same size would reveal minor differences of structure ; for example, in the form of leaf, thickness of bark, inclination of branches, color of flowers, etc., many of which might only serve to distinguish the individuals while others would be of sufficient importance to constitute varieties, or even species.

Insanity therefore is not a disease, it is rather a class of disorders which tend to arrange themselves with greater or less distinctness into groups of reaction types. Its study is therefore primarily a study of function, and must be conducted, not in the autopsy room, but in the psychological laboratory. And this study of disordered function will only reach its full fruition when the results of the detailed analysis of abnormal reaction types are correlated with the results of a study of the mental "make up" of the individual before he becomes insane—in other words, a psycho-analytical study of character.

Perhaps this is best illustrated clinically when we consider any one of the etiological factors of insanity. Take, for example, alcohol. Now there are a number of psychoses that seem to occur almost wholly under the influence of alcohol. Of the various so-called alcoholic psychoses one patient will develop delirium tremens, another acute hallucinosis, a third Korsakoff's psychosis. What conditions the special form of psychosis in each case we do not know. On the other hand, certain patients as a result of alcohol develop entirely different psychoses, the alcohol perhaps conditioning the outbreak of an attack of manic-depressive insanity or leading to the breakdown of dementia precox or the development of paresis.

The study of character has, fortunately, begun to be appreciated, and is already accumulating a considerable literature and leading to very suggestive results. We have for some time known very well, in a general way, the unbalanced character, the epileptic character, the hysterical character, and the unresistive character recognized so often in general medicine because of the abnornal reaction to febrile disturbances, easily developing delirium as a result of only a moderate fever, and while recent studies have outlined the differences in character as modified by sex, and the study of the psychology of psychasthenia has given us an understanding of the psychasthenic character, we are only beginning to recognize those types that may later develop a psychosis. We perhaps have definite types of character which tend under appropriate conditions to develop the manic-depressive types of reaction while others tend to the development of deterioration types. This whole subject has received a great impetus by the study of the psychology of the adolescent period by such writers as Mosso in Italy, Clouston in Scotland, and Stanley Hall in this

country, while the general subject of character has been especially treated by Paulhan in France, and I believe very recently by Sommer in Germany.

The individual is a biological unit, and must be so considered in relation to other individuals, to society. If this is forgotten the perspective is lost. We no longer consider the end and aim of psychiatry either to find a diseased nerve cell or to make a hard and fast diagnosis of a given condition at a given time. If we are to understand the psychosis we must understand the individual, and to understand the individual we must study not only his origin and development, but his adjustment to conditions. We can not understand a psychosis by subjecting it to cross-section for the purpose of defining its content at a particular point, or by subjecting it to a longitudinal section for the purpose of tracing the beginning and the end of symptoms. Such subjection to the narrow field of an optical section will not do—it must be studied as a life history. Our patients must be considered as individuals who, under certain conditions, have reacted in certain ways. The type of reaction can only reach its explanation in the type of person displaying it, and insanity can only be adequately dealt with either from a preventive or curative standpoint when this is recognized.

Dr. Hickling said that he had enjoyed thoroughly the able and interesting paper. Dr. White's views explain very well the variable definitions of insanity. The measurement of dislocations of the mind will be difficult until we can definitely fix sanity. The old delusional or monomanic insanity will probably always be found associated with other abnormal conditions; the removal of such associated conditions may in a few cases effect a cure.

Dr. P. C. Hunt said he desired to congratulate the Society upon the privilege of hearing Dr. White's paper. Certainly Dr. White had opened a very wide field for discussion. No two alienists agree in nomenclature. The great trouble in defining insanity is to obtain a standard of sanity. Creighton says there is no man who may not give way under some stress. If insanity is imperfect reaction to environment, what is the normal reaction?

Dr. I. W. Blackburn said he must coincide in the opinion that the study of insanity cannot be conducted in the dead-house. Unfortunately the pathologist's scope in this class of work has been overrated, and unjustifiable expectations have been based upon his work. The study of insanity must be conducted during the life of the patient.

Dr. Wood referred to Dr. White's remarks upon hysteria. Dr. Wood had had a number of cases of hystero-catalepsy, all of which gave evidences of cardiac valvular lesions ; do the statistics show any relation between the two conditions? Most of his cases seemed somewhat like self-hypnotization, and were associated with painful menstruation.

Dr. Vaughan said that he cannot help thinking that some physical defect of the brain will eventually be found as the cause of insanity. He fancied the brain as an instrument upon which the mind or soul played—when the music is no longer harmonious, the instrument is no longer whole.

Dr. Chappell asked if he had understood Dr. White correctly as saying that in order to determine the mental condition of a man it is necessary to compare him with himself ; and that there may be no physical basis for changes in mentality?

Dr. White said as to monomania, the old term for paranoia, that it is not an intellectual defect but an emotional one is the general conception. With regard to hysteria, it is purely a mental condition, and, so far as he knew, its association with cardiac valvular lesions should be entirely accidental. As the condition is most frequent in adolescents, it is quite natural that it should be associated with disturbances of the sexual organs.

As to histological changes in the brain in insanity, the pathologists have been working for years without accomplishing much in actual results. The technic is so difficult, and the prevalence of intercurrent diseases is so great, we cannot determine whether changes found are *post hoc* or *propter hoc*. The notion that insanity is after all a matter of functional disturbance is quite in line with the study of functional changes of the organs in all other lines of research. Careful functional study must be made in order to make structural studies of value.

He rather inclined to the opinion that some structural change does take place in insanity, but often of such transient character that no evidence of it can be found after death.

The newspaper announces the death of Dr. A. D. FORSYTHE in this city, July 31st. Dr. FORSYTHE was a member of this Society. A further notice in regard to him will appear hereafter.

THE PROGNOSTIC SIGNIFICANCE OF THE WIDAL REACTION.*

By H. C. MACATEE, M. D.,

Washington, D. C.

For several years, in both hospital work and private practice, I have been interested in observing an apparent relationship between the Widal reaction and the prognosis in typhoid fever. In my own mind I had long ago formulated a crude rule, based on the assumption that the agglutination reaction is an expression of the presence of protective substances in the blood serum, by which certain elements of the prognosis seemed to be ascertainable; in many instances the prevision arrived at in this way has been confirmed by the event. This rule may be briefly expressed in the following divisions:

(1) In very severe, hypertoxic cases, the early appearance of the reaction, well marked, is without prognostic significance except as it indicates good resistance to the infection.

(2) In severe cases, the absence of the reaction or its presence only in low dilution is of bad omen, indicating feeble resistance.

(3) In mild cases, the early appearance of the reaction in high dilution indicates short duration of the disease, without much probability of relapse.

(4) In mild cases, the absence of the reaction or its presence only in low dilution or at intervals usually indicates a long drawn out attack, or a mild attack followed by a relapse in which the reaction will appear in its typical form. The behavior of the blood serum in these cases is due to the low degree of virulence of the breed of bacillus typhosus present and consequently to the defective stimulation of defensive mechanism.

(5) The agglutination reaction can throw no light upon the probability of complications and accidents.

During the few years in which I have held these notions the current literature, so far as I know, has had nothing to say upon this use of the Widal reaction, and the text-books do not mention the method among the prognostic signs. Cabot in his "Clinical Examination of the Blood" does not mention this feature of serum reaction, and Curschmann, writing upon typhoid

* Read before the Medical Society, April 24, 1907.

fever in Nothnagel's *Encyclopedie*, contents himself with remarking that Catrin had made an attempt to show that the vigor of the agglutination reaction was proportional to the severity of the infection, but that his work had been disproved by Stern. Much more may be found, however, if we go back to the beginning of the work upon the agglutination phenomenon.

Charrin and Roger[1], between the years 1889 and 1894, working with animals immunized against bacillus pyocyaneus, observed a clumping of that organism when exposed in culture to the serum of such immune animals. They characterized this behavior as a "defensive phenomenon." In 1891 and a few years following, Metchnikoff, Issaef, Issaef and Ivanoff[2] made similar observations as to the action of immune sera upon vibrio Metchnikovi, the pneumococcus, and the vibrio of Ivanoff. In 1894, Pfeiffer[3] demonstrated that cholera spirilla, mixed with immune serum, and inoculated into the peritoneal cavity of guinea-pigs, were destroyed, and upon examination at autopsy were found to be aggregated into clumps and to have undergone granular degeneration. Pfeiffer attributed this effect to the presence in the immune serum of a substance, "antikoerper," which was bactericidal and specific. He proposed to utilize this phenomenon for the differentiation of bacteria, proving the identity of an organism by exposing it *in vivo* to the action of serum immunized against it. To this extent and for this purpose the practical use of the agglutination reaction must be accredited to Pfeiffer.

In 1895, Bordet[4] reproduced Pfeiffer's experiments *in vitro*, and proved the possibility of differentiating bacteria by the agglutinating action of specific sera in the test tube. In 1896, Grueber, in Austria, and Durham[5], in England, elaborated the method for the differentiation of Eberth's and the colon bacillus. They used the diluted serum of immunized animals. Grueber[6] called the phenomenon a reaction of immunity, and also produced it with serum from patients recently recovered or convalescent from typhoid fever. He was thus the first to suggest the possibility of making a retrospective diagnosis of enteric fever by serum reaction.

On the 26th of June, 1896, Widal[7] announced to the Société Médicale des Hopitaux de Paris that the reaction of agglutination could be obtained in the course of typhoid fever, often very early, and that the phenomenon constituted a valuable diagnostic

procedure—sero-diagnostic. Paul Courmont, of Lyons, was very early attracted by the fact that in Widal's work there appeared great variability in the time of appearance and the intensity of the reaction, and conceived the idea that some relation existed between the intensity of the infection and the intensity of the reaction. He immediately undertook an elaborate experimental investigation, and in 1897 published the results of his work as an inaugural thesis, entitled "The Sero-Prognostic of Typhoid Fever." It will be seen that his conclusions were more nearly in accord with recent notions in regard to immune bodies of the blood than was his original conception of parity between the intensity of infection and that of the agglutination reaction.

By painstaking examinations of the body fluids, obtained at autopsy, he sought to ascertain the source of the "*substance agglutinative*," now known as agglutinin, and to determine whether or not its rôle was defensive. He reached the following conclusions.

(1) Agglutinin is found in greatest abundance in the blood, and is probably formed in the blood.

(2) Fluids of serous cavities have variable agglutinative powers; always lower when infected with bacillus typhosus.

(3) Glands of external secretion (liver, kidney, etc.) eliminate a portion of agglutinin; the arterial blood entering these glands contains more agglutinin than the venous blood leaving them.

(4) Glands of internal secretion play no rôle in the production of agglutinin; spleen and mesenteric glands appear to destroy it.

(5) Finally, organs infected with Eberth's bacilli, or directly intoxicated with their secretions, as spleen, liver, mesenteric glands, contain little agglutinin, a fact tending to show a direct antagonism between the agglutinative substance and the bacilli or their toxins.

In short, he reasoned, the source of agglutinins is the blood; their rôle is one of defense.

He attacked the problem of the nature of agglutinin by a series of experiments upon guinea-pigs, using a set of animals, lot A, for inoculation with agglutinated culture (1 drop of serum to 10 drops of broth culture), controlled by three sets: lot B, inoculated with an equal volume of pure culture and, independently, an equal volume of the same agglutinating serum under the skin; lot C, inoculated with the culture mixed with non-typhoid serum

(1–10); and lot D, inoculated with pure culture alone. It was found that lot A lived about 40 days; lot B lived about 10 days; lots C and D, about 12 days. A curious difference was observed between the periods of survival of different sets of guinea-pigs in lot B. Those that received pure culture and agglutinating serum taken from patients in the early days of the disease succumbed in 24 to 48 hours; those receiving pure culture and agglutinating serum, taken late or during convalescence, acquired a measure of protection, though they also finally succumbed. From these results Courmont concluded as follows:

(1) The agglutinating substance of the blood serves to attenuate the bacillus typhosus.

(2) Agglutinating serum taken early in the disease and independently inoculated serves to favor the virulence of the bacilli; showing the simultaneous presence in the blood of an agglutinating substance and a dissimilar substance favoring the toxicity of the living culture.

(3) Agglutinating serum taken late or in convalescence and independently inoculated serves to favor in a measure against living cultures; showing the simultaneous presence in the blood of the agglutinating power and a dissimilar protective power—"*pouvoir vaccinant.*"

Briefly, he concluded that there exists in the blood of typhoid patients, at first, a power to favor the virulence of bacillus typhosus; there appears early a power to attenuate and agglutinate this bacillus; there appears late a power to protect against this bacillus. From these premises, Courmont deduced that in the usual course of typhoid fever, the favoring power was counterbalanced by the development of the attenuating and agglutinating power, which was a defensive substance existing and increasing in the blood, until the development of the "*pouvoir vaccinant,*" an immune substance, which rendered the agglutinin no longer necessary, thus accounting for its subsidence or disappearance after convalescence.

To determine the prognostic value of the agglutinative power (*P.A.*), it was necessary to measure the intensity of it. For this purpose he used as a minimum positive reaction, complete agglutination of 10 drops of culture (standard) by one drop of serum; the constant 1 drop of serum was held to increase in agglutinative power as it was able to precipitate 20, 30, 40, up to

10,000 or more drops of culture. In a large series of cases he tested the *P.A.* of the serum every two or three days, and found that in simple cases of moderate severity—

(1) A typical curve of agglutinative power can be obtained.

(2) The ascent is more or less rapid, reaching 1–50 or 1–100 about the 10th day.

(3) The maximum intensity is variable and may reach 1 to 650 or 1 to 1000 in the mildest forms. "The maximum is usually attained at the moment at which the symptoms abate or the defervescence becomes marked. . . . This critical elevation may be lacking in the course of the disease, but very rarely; in the simplest forms it may easily escape observation, as the observations are not frequently repeated and it takes place most often in only a day or two."

(4) "The descent of the agglutinative curve is more rapid as the rise was more rapid, high or precocious. The descent under these circumstances takes place in a manner parallel to the fever curve, but the descent stops before returning to normal and rarely descends below 1–50 during the first month of convalescence.

(5) "The curve may be in the form of a gable, dome, or steeple, according to the height or rapidity of the ascent.

"The gable curve is met with in benign cases; the curve *en plateau* coincides ordinarily with more severe forms, at least at the outset."

So much for the typical curve. Of atypical curves he says: "From a prognostic point of view it should be recognized that a *P.A.* feeble and fugitive is the rule in mild or abortive cases. Retarded or partial reactions are frequent." "The prognosis in these forms is obscured by the frequency of relapses, and this shows that a reaction retarded, feeble, fleeting, bearing evidence of an attenuated reaction of defense, is an unfavorable phenomenon."

Courmont sums up as follows:

"The study of the variations in the serum reaction in typhoid fever can then give evidence of a part, but only a part, of the defensive processes in the sick organism. The coefficient of the agglutinative power at a given period of the disease, and above all *the curve* of the *P.A.*, may then be important prognostic elements, just as the fever curve, but in an inverse way; the first, curve of defense, assumes its full value only when compared with the second, curve of infection.

"In a general way, elevation of the *P.A.* is by itself a good prognostic, especially if it attains a high plane at the moment at which the temperature begins to decline; in the last instance it has always announced to us a definite cure.

"Inversely, a *P.A.* little elevated, a curve of agglutination low or oscillating, especially as pertaining to the end of the second week, is of bad omen. It is most often an indication of a grave or prolonged form of the disease, or else in the mild types gives fair warning of a recrudescence or relapse. The descent of the agglutinative curve without decline of the fever is a very bad sign."

An important reservation must be noted: an elevated agglutinative power, by itself a good sign, may become a bad sign if it is preceded by an agglutinative power relatively much higher and at the same time no amelioration of symptoms takes place.

M. J. Rouget[8], working among soldiers in Algiers, and using different methods, disagreed with Courmont's findings. He did not observe a typical curve; he was unable to use the agglutinative intensity as a prognostic sign, but only as a retrospective explanation of results, with the complete curve under observation; he found the *P.A.* essentially variable, without any way of explaining the cause of fluctuations; and finally he found it necessary for exactness to take observations daily. An examination of his figures shows, however, that there was a gradual rise of *P.A.*, with a decline toward convalescence, without disappearance of the reaction; also, the frequency of his observations tended to confuse the graphic picture, just as the two- or four-hour temperature chart conveys scant information as compared with the diurnal variations.

M. G. Etienne[9] agreed that the sero-prognostic gave important information with regard to resistance to the specific infection, but none as to the prognosis with regard to (a) secondary infections; (b) complications, as perforation and hemorrhage; (c) accidents due to defective resistance of particular organs, as myocarditis, phlebitis, etc.; (d) accidents, such as embolism. The criticism is obvious and admissible, but has scant bearing upon the specific method.

What then has become of this sero-prognostic of Courmont? I confess that I had never heard of it until I made a search of the literature, under the conviction that such an important

feature of the agglutination reaction could not have escaped the attention of some of the practical workers in the serum reactions which take place in the establishment of immunity. The sero-diagnostic of Widal has assumed a place of common everyday routine, and its next of kin seems buried in past years. I believe that its eclipse has been due to the rapid development and simplification of the technic of the sero-diagnostic ; the varied methods used by different hematologists, the use of the dried blood specimen, the hanging drop mode of observation, the determination of intensity by the effect of dilute serum of varying strength upon a roughly measured or unmeasured quantum of culture,—all of these factors have served to obscure the *quantity* of agglutinative power present in the blood, and thus the curve of agglutination has not been observed.

Many of the results obtained by Courmont, when reviewed in the light of ten years since and invested with the nomenclature of Ehrlich and Wright, assume most interesting features. We no longer require his laborious proof that the agglutinating substance is a true blood ingredient; also, we know that the human organism will always tend to produce the necessary antitrophic body for every invading body of an infective nature, and it is reasonable to assume that Courmont's agglutinative substance is agglutinin ; his attenuating substance, which prolonged his guinea-pigs' lives, was the bactericidal and bacteriolytic ingredients of typhotrophin ; his favoring body, which increased the virulence of the inoculated culture, was typhotoxin ; his vaccinating substance, which in a measure protected his guinea-pigs from the inoculation, was the antitoxin of typhotrophin.

Thus we have all the necessary ingredients which Wright[10] enumerates for a typhotrophin—agglutinating body, bactericidal body, bacteriolytic body, antitoxic body, except his own remarkable discovery, opsonin. It appears, then, in the light of more recent work, that Courmont reasoned well in attributing to the agglutination reaction an expression of the defensive process of the human organism ; however he may have failed in interpreting the nature of other qualities of the blood serum which manifested themselves in his experiments upon guinea-pigs, his observations as to their effects were correct.

He did not, of course, recognize any body in the blood which favored defense by stimulating phagocytosis—namely, opsonin.

And upon this, it is interesting to note, Wright[11] states, in connection with phagocytic experiments upon bacillus typhosus, "it is well known that human blood exerts a very considerable bactericidal power upon cultures of bacillus typhosus and cholera vibrio. The destructive effect in question manifests itself to microscopic observation in the form of very profound morphological changes which come under observation in cultures which have been digested with unheated serum. The bacteria in such cultures after undergoing agglutination and spherulation, swell up and lose their affinity for anilin dyes. Finally they are dissolved.

"It is manifest that where disintegrative changes of this kind are occurring under the influence of the serum, opsonic effects will be more or less thrust into the background. These last will, in the case of phagocytic experiments conducted with unheated serum, be masked, on the one hand, by the fact that there will be fewer bacteria available for phagocytosis, and, on the other hand, by the fact that intracellular disintegration will, it may be presumed, be more rapid in the case where the serum has already exerted a disintegrating effect on the bacteria anterior to their ingestion." . . . "Of incidental interest, ... is the demonstration . . . that the spherulation of the intracellular ingested organisms, which has often been ascribed to the agency of the leucocytes, is in reality due to the agency of the blood fluids." These statements of Wright, considered here solely in the way of theoretical speculation, taken in conjunction with the fact that there is a diminution rather than an increase of leucocytosis in typhoid fever, would tend to indicate that the defensive process of enteric fever is carried on by the agglutinating and bactericidal substances in the blood, as indicated by the agglutination reaction, in preference to the opsonic body, as indicated by the opsonic index, in terms of phagocytosis. If this be so, then the state of the body in typhoid fever may be better determined by an exact measurement of the intensity of the agglutinative power than by the measurement of the opsonic index, which is so popular nowadays.

In defense of Courmont's curve of agglutination, an examination of the tracings in his original article will reveal a close resemblance between them and the graphic representation of the

course of the opsonic index after a favorable inoculation, as described by Wright; the primary negative phase (not observed in the early days of typhoid fever in the agglutination curve) followed by a positive phase, succeeded in turn by a reflow to a sustained relatively high level of accumulated immunity. Jorgensen and Madsen, according to Wright[12], have adduced proof that this same course of events takes place in the curve of agglutination when produced artificially by inoculation, viz: negative phase of stimulation, positive phase of response, reflow to a sustained level of acquired immunity. It is of speculative interest to suggest that, since every positive phase must be preceded by at least a fleeting negative phase, the variability of the curve of agglutination, complained of by Rouget who made daily observations, may have been due to repeated observations of this curious sequence of events.

In view of all the facts which have been brought forward, I believe that many of Courmont's conclusions, as interpreted in the light of later ideas, would be found to be true if the agglutinative intensity were accurately and scientifically determined by accurate measurement of the bacterial content of the test culture, as is done by count in the preparation of bacterial vaccines, and I believe that for typhoid fever this reaction would be as expressive of the defensive state of the body as the opsonic index; at any rate, it would be extremely expressive from a prognostic point of view and would be comparatively easy of determination.

Now to advert to the clinical observation which I have independently made, and from the consideration of which this study has resulted, I believe, even with the everyday method of making the Widal test and the inexpressive reports of "partial" or "positive," "tardy" or "rapid," excluding accidents and complications, that—

(1) In severe cases of typhoid fever, absent or feeble Widal reaction is of bad prognostic import.

(2) In mild cases, an early, definite, and sustained Widal reaction indicates early recovery without relapse.

(3) In mild or atypical cases, the absence of the reaction, or the presence of a delayed, feeble, oscillating reaction indicates prolonged duration of the disease or the probability of a relapse in which the typical reaction will appear.

[1] Courmont, P. Significat. de la Réact. agglut. chez les Typhiques, 1897.
[2], [3], [4], [5], [6], *Ibid.*
[7] Widal, Compte Rend. du Soc. Méd. des Hop. de Par., 1896.
[8] Rouget, M. J., Arch. de Méd. et de Pharm. Militaire, 1897.
[9] Etienne, M. J., Rev. Méd. de l'Est., 1899.
[10] Wright & Douglass, Proc. Roy. Soc., lxxxiii.
[11], [12] Wright, A. E., Antityphoid Inoculation, 8°. Westminster.

Dr. Acker said that while he has constantly used the Widal reaction for diagnostic purposes, he had never associated with it a prognostic import. He will be interested in the future to observe typhoid cases with regard to this feature. He has noticed that in severe cases the reaction is apt to appear early, and that in mild cases its appearance may be tardy, but he has failed to connect the circumstance of delayed or feeble reaction with relapses.

Dr. Randolph said he would like to be convinced of the possibility of making a practical application of the sero-prognostic; it is so necessary to standardize the cultures used in the agglutination test. Always the most virulent cultures respond best. It seemed to him that, in order for the reaction to be an index of resistance, it would be necessary that the agglutinin and the bactericidal body be identical. McFarland says that they are entirely different. One factor which would indicate a difference in these two qualities of blood serum is that dried serum is capable of agglutinating but has no bactericidal qualities.

Dr. Kober congratulated Dr. Macatee upon his paper. If the conclusions prove to be correct the contribution will be a most valuable one. Prognosis is always an important factor in the study of disease, and he hoped Dr. Macatee would continue to make observations along the same line. The defensive processes of the blood are supremely important and almost as elusive. Laymen, as long as twenty-five years ago, talked much of "the blood being out of order"; Dr. Kober believes that there are times when the blood is out of order and the individual is more susceptible to disease. He recalled the instance of a party of cowboys who were exposed to a blizzard on the plains; afterwards one developed pneumonia, another erysipelas and a third typhoid fever. Did these men each harbor bacteria potentially virulent, which only needed the reduced vitality consequent to the exposure to make invasion possible?

Dr. Parker asked what would become of the theory of the sero-prognostic in the five per cent. of cases in which no Widal reaction can be obtained.

Dr. Macatee expressed his thanks for the remarks which had been made. He replied to Dr. Randolph that the difficulties of practical technic were serious and would require much refinement in order to secure the accurate agglutinative curve sought for by Courmont. His own conclusions had been based upon the rough

estimates to be derived from the crude modes of making the Widal reaction which prevail at present. As to the dual character of agglutinin and bactericidal body, Courmont in his experiments concluded that the two qualities of blood serum were probably different but that they developed, increased and declined in the blood synchronously and in a parallel course. While very important to consider the two qualities together, if opsonin, a single ingredient of the total bacteriotropic substance, may be considered an index to resistance, so may agglutinin be considered in the same way.

As to the five per cent. of cases in which the Widal reaction may not be obtained, a paper recently published in the Bulletin of the Johns Hopkins Hospital suggests the possibility that these cases will be found in the paratyphoid class and will produce the specific reaction with the paratyphoid bacillus.

THE QUESTION OF OPERATION IN CHRONIC SIMPLE GLAUCOMA.*

By WM. H. WILMER, M. D.,

Washington, D. C.

In this paper the consideration of the question of operative procedure has been limited to cases of simple glaucoma.

The writer's experience in the beneficial effect of iridectomy in acute inflammatory glaucoma corresponds with the experience of other observers.

Those cases which show periods of decided irritation have been excluded, but the so-called cases of "excavation with atrophy" have been included when the other symptoms of glaucoma, except increase of tension, are present.

In the writer's opinion such cases do exist and are to be differentiated from atrophy occurring in a case of physiological cupping. It is a well known fact that typical cases of simple glaucoma in course of time show decreased vision, diminished light sense, impaired visual fields (scotomata or peripheral contraction), cupping of the nerve head and, nearly always, recognizable increase of tension, while outwardly the eye seems normal. The halo symptom, sometimes present in these cases, is seen under other circumstances, such as mucus on the cornea, incipient nuclear cataract, minute corneal ulcer, etc.

*Read before the Washington Ophthalmological Society, October 19, 1906.

Those cases with seemingly no increase of tension occur in eyes with so little rigidity of the sclera that the increase of tension is not recognizable always by the usual mode of palpation. In other words, the tension is actually increased for that eye, but cannot be recognized readily by the usual methods of examination. There is a relatively wide range in the rigidity or elasticity of the sclera in healthy eyes.

Until the pathogenesis and the pathology of this type of glaucoma are better understood, better results from treatment cannot be expected. The very number of the theories as to the cause of glaucoma is an indication of the unsatisfactory state of the existing knowledge of its pathology. The results of glaucoma are well known. In order that the question of operation may be considered logically, it will be well to mention briefly some of the theories of the cause of glaucoma: (1) Over secretion; (2) Retention of many kinds; (3) Difference in the general blood pressure and that of the eye; (4) Increase of albumen in the aqueous; (5) Varying osmotic pressures; (6) Prof. Wahlfors' ingenious theory, which is quoted in some detail as follows:

"The atrophic process in the choroid is to be regarded as the cause of functional disturbances occurring in simple glaucoma. The dimness in the light sense is a result of this process and the malnutrition of the rod and cone layer which it causes. The contraction and other defects in the field, as well as the diminution of central vision, are results of the increasing malnutrition and the gradual degeneration of the rods and cones. Since this atrophy of the choroid, as a rule, extends to the elastic fibers of the lamina cribrosa, the latter lose their power of resistance and the intraocular tension causes excavation. The excavation of the disc is indeed one of the most characteristic symptoms of simple glaucoma and is independent of the existence or non-existence of increased tension. In glaucomatous increase of tension three factors are at work, the paralysis of the muscular net-work of the choroid, causing a slowing of the currents of liquid, the channels of exit, which, in consequence of the retarded flow through the deposit of the formed elements, become blocked and cause retention of the ocular liquids; and finally the anatomical arrangements of the venae vorticosae, which are compressed by the increased tension, and thus lead to a general stasis with all its results."

In connection with this theory the writer recites briefly a case which had transiently marked symptoms of glaucoma. This patient, a woman of middle age, has been under the writer's care at intervals since April, 1896. She was myopic, with astigmatism with the rule. With correction, her vision was 20/20—. Except for an occasional change of glasses, her case was of an ordinary character. However, in May, 1905, she was seen again. The right eye had remained unchanged, but she complained of pain in the left eye, of dimness of vision and haloes. The eye was free from all external inflammation. The pupil was dilated and the anterior chamber shallow. T + 1. Field slightly contracted. The vision, with one diopter stronger glass than was usually accepted, was 20/40—. The ophthalmoscope showed the retinal veins on that side enlarged and the disc hazy. In the vitreous were numerous fine, dust-like floating opacities. Pilocarpine and hot applications locally, and an iodine preparation internally, were prescribed. In forty-eight hours the vision was 20/30 with glass ½ diopter less strong. The patient returned to her home in Boston, where she was quite ill for a while. She continued the treatment, however, and when well again she consulted two well known oculists in Boston, who found the eye quite normal. The writer saw her again in May, 1906, and found the eye restored to its usual condition except that the pupil was still a trifle dilated. Though no lesion in the choroid could be demonstrated in this case, it is safe to say it was one of serous choroiditis with transient glaucomatous symptoms.

A longer continuance of the choroiditis would probably have started the vicious circle culminating in glaucoma simplex. Clinically it would seem that glaucoma has its origin in an obscure affection of the trophic nerves and that gout and arterio-sclerosis are often predisposing causes of this condition. In view of these theories a cure, in the strictest sense of the word, cannot be effected by an operation. However, be the cause of glaucoma what it may, it is agreed that continuous increase of tension menaces the health and the functions of the eye. Operative measures relieve this symptom more or less permanently, in some cases, even though the cause remain.

Sclerotomy has not proved satisfactory in the hands of most operators. Personally it has been found of only transient benefit. It has one advantage over iridectomy in being freer from risk, and in some types of glaucoma it can be employed often to ad-

vantage as a preliminary procedure. It seems to give good results chiefly when often repeated and associated with massage of the globe. Few of the writer's patients would consent to this treatment without a better prognosis than could be given. Iridectomy is the main reliance of most operators.

Exner explains the action of iridectomy by saying that a portion of the iris is removed up to its ciliary attachment, and the short arterial twigs which proceed from the major arterial circle of the iris have the opportunity of forming direct anastomosis with the corresponding venous twigs. The arterial current can thus pass directly into the veins without being obliged to pass through the fine capillary net-work. The writer wishes that he could demonstrate this to his own satisfaction. It would increase his faith in the value of iridectomy. Parsons says: "Uncomplicated wounds of the iris have received scant attention, and it is probable that important facts might be discovered by investigation."

Dr. C. S. Bull says: "The operative effect of iridectomy is more certain and undeniable the earlier it is done. The curative effect of iridectomy stands in direct proportion to the increase of tension."

Professor Wahlfors says: "In simple glaucoma there is no indication of iridectomy as a curative procedure; but since an acute congestive attack may come on in a case of simple glaucoma, iridectomy is of prophylactic value, and the operation is more easily done in the quiescent stage than in an acute attack."

Dr. Gruening says: "I would operate in every case, being guided by the patient's color perception. If I find an impairment of color perception and scotoma I do not operate."

The majority of the writer's cases of simple glaucoma are in elderly persons where the central vision is fair but the field markedly defective. Such cases come to get better glasses because they do not see as well as they think they should. They complain of needing a very bright light for reading. Other cases with glaucoma (especially from the country) are under the impression that they have cataract. They wait patiently for the cataract to ripen. When they are finally seen, it is too late to give much help. The favorable indications for an iridectomy, on the whole, would seem to be relative youth, good color sense, large pupils, good nutrition of the nerve head, absence of marked contraction of the fields, absence, or smallness, of scotoma, markedly increased tension. The less the atrophy, the better the prog-

nosis. Those cases where the nerve is quite white, even where the tension is high do not offer as good a result, neither do those cases of so-called atrophy with excavation. Conditions not favorable to an iridectomy are old age, field encroaching upon the fixation point, poor general nutrition, high blood pressure, poor color perception and where the atrophy is decided and the tension not marked.

Incipient cataract in an old person should be considered also, because such a case can often read Jaeger 1. An iridectomy would probably, on account of the resulting astigmatism and the increase of the cataract, make the vision immediately worse. Sympathectomy was first employed by Jounesco in 1897. In the Archives of Ophthalmology for 1904, in his article upon "The Present Status of Cervical Sympathectomy for Glaucoma Simplex," he summarizes his conclusions partly as follows:

"It is true that a study of the clinical results fails to show any factor, *as far as the writer* (Dr. Loring) has been able to discover, that determines how far the operation will be successful in any given case, or what determines the character of a favorable result. Clinical reports fail to show any marked gain in the early *versus* the late operation. Possibly it may be shown that the bilateral operation gives the most favorable result. Still it may be said that in glaucoma simplex the tension is reduced in almost all cases generally to normal, and it may remain so for many months. Serious after-results that may be said to contra-indicate the operation have so far not been demonstrated. Altogether the writer (Dr. Loring) believes that sympathectomy is a distinctly justifiable operation that ought to be more often tried as a final resort in glaucoma simplex when, notwithstanding miotics, iridectomy and sclerotomy, the disease progresses steadily towards eventual blindness."

Of the reports of sixty cases collected by Dr. Loring only a few were observed after one year—too short a time to make the reports of value concerning the final outcome.

The writer has had only one case in which the removal of the cervical sympathetic was performed. As this was done twenty months ago, the case seems to be worth reporting. Mrs. A., aged 52, was seen by the writer concerning her eyes in January, 1905. She stated that her eyes had first troubled her about January, 1903. On April 22d, 1904, an iridectomy upon the left

eye under a general anesthetic was performed by a skilful oculist in her city. Immediately following the operation there was an extensive hemorrhage. From that time the eye was painful and sensitive, and the sight of the right eye seemed to be dim. Shortly before coming to Washington she was advised to have the left eye removed to save the other eye. At the time of the examination the writer found the left eye in a state of absolute glaucoma, T + 3, partial staphyloma over the site of the iridectomy. The pupil of the right eye was small and there was a marked external irritation. Both the contracted pupil and the irritation were caused by the frequent use of a strong solution of eserine. They passed off when the drug was stopped. The anterior chamber was shallow and the tension was T + 1. The sight of that eye with Sph. + 4.50 = cyl. + 1.25 ax. 180° = 20/20. With S + 6.50 = cyl. J/1. at 12″, fields and color sense were normal, nerve slightly cupped, veins large, arterial pulsation easily produced. Bilateral sympathectomy was advised by the writer and was performed by Dr. Mitchell. Recovery was rapid and comfortable. Only one peculiar symptom (to which the patient did not object) was noted. To use her own words: "When I put anything into my mouth, I have a pain that is just like the mumps, but it lasts only a moment." This symptom still persists.

Immediately after the operation both eyes became soft. There was a suffusion of the conjunctiva for a few days, but it disappeared. When last examined, about seventeen months after the operation, the patient was in good health and in a much more cheerful frame of mind. The sightless eye was soft, free from pain and irritation. In the right eye the tension was normal, anterior chamber less shallow, pupil small, free from irritation. Fields and color sense normal, S = 20/20. No increase in cupping of the nerve, haziness of disc gone. The patient uses at bedtime a drop of pilocarpine. However, the conditions are just as favorable when this is omitted.

The experience with this case, taken with others reported, induces the belief that sympathectomy has a small but decided place in the treatment of simple glaucoma.

Sympathectomy is justifiable where one eye has been lost from, or in spite of, an iridectomy, provided the age and general health are favorable. And it seems justifiable under some circumstances in those so-called cases of atrophy with excavation.

A CASE OF FILATOW-DUKE'S OR THE FOURTH DISEASE.*

By GEORGE W. WOOD, M. D.,

Washington, D. C.

The patient was a young man 17 years old, native of a tropical country, and temporarily a resident of this city. He was first seen at my office February 19 of this year. At that time he was feeling weak and tired, had not much appetite or energy, and complained of pains in his back and shoulders; his bowels and digestion were normal, tongue clean, he had no fever, and his urine was normal except for a good deal of indican.

This patient was next seen February 28. He was feeling better, but came to show me a rash that had just appeared. I found every part of the body that I looked at covered with a fine punctate rash, nearly as large as a very small pinhead and perhaps an eighth of an inch apart. The skin was a pale brownish-red of uniform tinge, which later became mottled in irregular areas many times larger than those of measles; it did not pale much under pressure, probably because of the patient's dark complexion.

At this time his face had already begun to peel and looked as does a case of sunburn, his temperature was normal, his tongue clean, the fauces showed no redness nor inflammation, and the urine was again normal except for the presence of indican. The rash was too coarse for scarlet fever and lacked the appearance of measles or of roseola.

I questioned him on the use of medicines and the eating of sea-foods: he had not taken any medicines and he never ate anything that came from the water.

I did not see him again until March 17. He was still peeling, the whole body desquamating, but his face had become clean; on the chest were large brownish mottled areas, some of them as large as the hand. He had had a fever for about ten days, about 100 in the morning, 102 in the evening He was weak and tired, had not much appetite, and had some headache.

His blood was examined for typhoid, with negative results.

He was put on an antimalarial treatment, and two days later his temperature was normal.

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*Reported to the Medical Society, May 22, 1907.

At this point his father decided to take him to New York City to see his regular physician. This physician promptly pronounced it scarlet fever, although the rash had entirely disappeared nearly three weeks before, and the only evidence of it was the desquamation.

The Health Office here was notified and the premises were disinfected, although the family with whom he had resided believed, as I did, that his disease had not been scarlet fever. Moreover, during the patient's illness his friends had visited him freely and no one had contracted the disease.

I saw this young man again a few days ago, when he reported an uneventful quarantine of five weeks in New York City, during which he desquamated again but had no rash and no fever. The prolonged desquamation may be accounted for by his having a thicker epidermis than that of the more northern races, his being that of the olive skinned Latin-Americans.

I am aware that a disease so closely resembling scarlatina only adds to the possibilities of error in diagnosis; but having the new picture in mind the differences can be clearly made out. Its recognition easily explains the atypical cases which, more than in any other disease, are found in scarlet fever.

Note.—In reading over all of the literature in English which has been written on this subject I am impressed with the fact that the disease generally occurs in the spring, and that the punctate rash is always primary and usually precedes the scarlatinaform blush by about twenty-four hours.

Bibliography.—The Public Health Reports of The Public Health and Marine Hospital Service; Bulletin of May 10, 1907. This contains practically all of the references published.

Benjamin Edson's "Duke's Disease," *Brooklyn Medical Journal*, March, 1905, pp. 111–114.

Dr. Chappell asked if Fourth Disease is not contagious? He did not gather from Dr. Wood's report that anyone else had contracted the disease from his patient, nor did the symptoms reported tally with descriptions Dr. Chappell had read of Fourth Disease. He frequently encounters mild eruptive diseases difficult or impossible to classify. Several cases in the past winter have closely resembled mild scarlet fever or rubella: they were mild, short, and apparently not contagious.

Dr. Kober said that in 1895 he had studied scarlet fever with relation to milk infection; he had often found apparent milk

epidemics where no scarlet fever existed at the farm. It has been held by some that a disease from the udder and teats may develop into scarlet fever in man. He himself believes disease may be due to streptococci transmitted from the cow to man; such disease may not necessarily be contagious.

Dr. Adams said that a recent editorial in the *Journal of the American Medical Association* contained the first carvings in the tombstone of Fourth Disease. We have lost sight of the fact that the old dictum that man may have certain infectious diseases only once is an error: man may have them twice, and a previous attack may greatly modify a second. He and Dr. Acker have never seen Fourth Disease at the Children's Hospital. We also may lose sight of gastro-enteric and drug intoxications which may have typical rashes and fever.

He inclined to the belief that Dr. Wood's case was actually scarlet fever.

Dr. Chappell said that he had seen several cases in which gastro-enteric causes could be excluded; they looked like scarlet fever, but yet were so unlike he did not isolate. No other children caught the disease, and he took that to mean its non-contagiousness.

Dr. G. L. Magruder said that Dr. Kober's remarks upon milk infection and Dr. Adams' upon gastro-enteric intoxications throw light upon the subject. We have recently seen the demonstration of the rapid proliferation of germs in milk; such a condition may produce gastro-enteric irritations and, by sympathy, skin rashes. Exfoliation may be severe in drug rashes and food eruptions.

Dr. E. L. Morgan called attention to the fact that some soaps, especially glycerin soap, may produce dermatitis and exfoliation.

Dr. Wood in closing the debate said in reply to queries that the Fourth Disease was contagious; there was no history in this case of gastro-enteric disturbance; the patient was a prudent and moderate eater. The diagnosis was based chiefly on the character of the rash, the absence of albumen from the urine and the mildness of the disease. As to streptococci, it seemed incredible that enough of them could be ingested to cause a rash without also causing marked constitutional disturbance; such explanation of the condition would seem more remarkable than the condition itself. As to soap, the boy had used only ivory soap. As the rash appeared ten days after the last dose of the salicylates, it did not seem possible to connect the two.

CASE OF PERFORATING GASTRIC ULCER. OPERATION AND RECOVERY.*

By CHAS. S. WHITE, M. D.,

Washington, D. C.

The following case is the first of its kind to come under my observation.

H. B., 17 years of age, male, porter by occupation.

Previous history: He has had malarial fever and typhoid fever, with good uncomplicated recovery in each instance.

Present illness: For seven days prior to the acute onset he had suffered with intense colicky pains in the upper quadrants of the abdomen, not radiating; they recurred at short intervals. Emesis occurred at irregular intervals; blood was not visible in the vomitus. Occasionally the pain was limited to a small part of the epigastric region. He had anorexia, and languor and lassitude, with constipation, were conspicuous symptoms.

About 9.30 A. M., Nov. 30, 1906, he was seized with an excruciating pain in the abdomen, more particularly in the right lumbar region. He stopped his work at once, and lay down, but was not afforded relief, and at 12.30 P. M. his suffering had become almost unendurable. An ambulance was called and he was conveyed to the Emergency Hospital. I saw him at 1.00 P. M. There was tenderness over an area three inches in diameter, the center of which was about two inches above McBurney's point. The abdominal rigidity was the most pronounced I have seen in any condition. He was unable to stand erect, and when reclining kept his thighs well flexed. Vomiting had not occurred since the onset at 9.30 A. M. Temperature 97, pulse 78. A diagnosis of perforative appendicitis was made and operation advised at once.

As it was necessary to obtain permission of the nearest relative, the patient did not reach the operating room until about 3 P. M. The gridiron incision was made. As the peritoneum was opened a small quantity of yellow, sero-purulent fluid escaped. The appendix was normal and was not removed. A systematic search was then begun for the causative agent of the peritonitis. A large quantity of the exudate was sponged out of the abdominal

* Read before the Medical Society, May 22, 1907.

cavity, and from time to time little lakes of it were found among the intestines and in the dependent portions of the abdomen. The incision was enlarged. Beginning at the cecum, the small intestines were followed to the duodenum, the possibility of typhoid fever and duodenal ulcer being borne in mind. It was noticed during this manipulation that large flakes of yellow lymph were more numerous in the upper abdominal region, and using this as a clue, I gradually approached the pyloric end of the stomach, where the infective agent seemed concentrated. A diligent investigation revealed a small round perforation on the inferior surface of the stomach, about three inches from the pylorus. It was characterized by a parchment-like induration extending about half an inch in every direction. By grasping the stomach wall between the fingers the area could be easily outlined. The edges were friable and could not be inverted. A small fold of the peritoneal coat of the stomach was stitched over the perforation and reinforced, using the Pagenstecher thread. The patient's pulse at this time oscillated between 130 and 155, and in my opinion this was not a case for excision of the ulcer or gastro-enterostomy. A drainage tube was placed at the site of the ulcer and another left in the lower end of the wound, leading from the pelvis. The abdomen was closed in the usual manner.

He was placed in the Fowler position as soon as he reacted. He vomited several times daily a bile-stained fluid, until the third day. Water was allowed on the third day, and rectal alimentation begun at the same time. As soon as the emesis had ceased, 2½ grains each of bismuth subnitrate and anesthesin were given four times daily. Milk was allowed by mouth on the eighth day, and the enemata stopped on the fifteenth day, at which time he was taking three ounces of milk every two hours. He was kept upon a liquid diet until he was discharged, Dec. 24, 1906. The wound healed well except about the drainage tube, where slight infection occurred. All drainage was discontinued on the thirteenth day. I have often seen him since he left the hospital, and, aside from discomfort after eating on one or two occasions, he is doing very well. He is working regularly, and weighs two pounds more than he ever did previous to his illness.

The features that impress me most in this case are the lack of the classical symptoms of ulcer of the stomach, the promptness of the onset of peritonitis, the board-like rigidity and the age of

the patient. The slow pulse and normal temperature in such a case we may expect, and I place no dependence upon them. I have become fully convinced that an exploratory operation is demanded in 90 per cent. of cases presenting sudden abdominal pain, rigidity and vomiting, and the mortality is lower as the delay is less. It can be roughly estimated that for every hour after a perforation has occurred the mortality rises six per cent.

Dr. Carr said that Dr. White deserved hearty congratulations upon his success in this case. Dr. Carr thought from the appearance of the patient that there could be no doubt as to the complete cure of the ulcer. When an ulcer is sewed up with inverted edges cure will be effected in 99 cases out of 100.

San Francisco.—To the Medical profession of the District of Columbia, Virginia, West Virginia and North Carolina :

The medical profession of San Francisco lost its medical library, the San Francisco County Medical Society Library, in the fire in the Spring of 1906. Most of the physicians also lost whatever private libraries they had succeeded in collecting. A committee has been appointed by the American Medical Association and by the Association of American Physicians to collect and send books to San Francisco, both for the library and for private individuals when duplicate copies are sent on.

Will you send to Dr. George M. Kober, 1600 T Street, Washington, D. C., any medical books of value or bound volumes of journals which you can spare? Fairly recent editions of standard text books, foreign text books or bound journals (French, German and Italian), hospital reports, monographs of all sorts, books on special subjects, old classics (*e. g.* Trousseau, Charcot) and the Sydenham Society publications are especially desired.

Acknowledgment of all that is received will be made through the medical journals, and the books will be packed and shipped as promptly as possible.

EXOPHTHALMIC GOITER.*

By ANNE A. WILSON, M. D.,

Washington, D. C.

To Caleb Hillier Parry, of Bath, England, belongs the credit of having first called attention to the malady which is now known under the various titles of Graves' disease, Basedow's disease and Exophthalmic Goiter. In 1786 Parry graphically described a case of exophthalmos associated with enlargement and palpitation of the heart. Several other cases of the disease were reported afterward by him. Flajani, of Italy, in 1800 referred to the condition. Graves, of England, 1835, and Basedow, of Germany, in 1840, published cases and each contributed much to the study of the disease.

In looking up the bibliography of the subject the amount written thereon by eminent English, French, German and American authors is almost bewildering. Kocher, in reviewing the subject, refers to 1,400 publications. This serves to show the interest in the disease as well as the lack of definition as to its etiology and treatment. The last word has not yet been spoken upon the subject, though, with present scientific laboratory experiments, the mists appear to be clearing.

About the year 1891, when a student at the Royal Free Hospital, London, where I had the privilege of working under Dr. Hector Mackenzie, whose name is well known in connection with his writings on Graves' disease, I had amongst the first cases apportioned to me in the wards one of typical Graves' disease. This case made an indelible impression upon my mind, and since then I have always been interested in the subject.

Some years ago only cases having the well-marked classical symptoms were diagnosed as cases of Graves' disease, and even quite recently Kocher has said that he is unfamiliar with Basedow's disease without goiter. In later years the incomplete forms have been recognized. French writers were amongst the first to call attention to these incomplete forms. It is known now that the disease may be well marked and yet there be no goiter or exophthalmos. One writer goes so far as to say that many cases diagnosed as neurasthenia are really cases of incom-

*Read before the Medical Society, May 15, 1907.

plete or not fully developed Graves' disease. Judging from the reported cases, either the disease is more frequent or the diagnosis more often made.

The suggestions as the origin of the disease and its treatment are so varied that in reviewing the subject the mind's eye has presented to it a most kaleidoscopic picture. I will as briefly as possible refer to the opinions of some of the best known authors on the subject. I have borrowed freely from the writings of Charcot, Moebius, Hector Mackenzie, Rogers, Beebe and others.

Etiology.—Charcot considered both sexes equally liable to the disease, but most writers report by far the greater number of their cases to be amongst women. The disease occurs usually between the ages of 16 and 40. A marked family tendency is sometimes seen. Hector Mackenzie had four pairs of sisters under his care at one time. Oesterricher's famous family is noteworthy. A hysterical woman had ten children eight of which developed Basedow's disease, and one of these children had three children suffer from the same malady. Others have reported family groups. Graves' disease has also been observed in families having a neurotic history. Though Dr. W. H. Thompson, of Roosevelt Hospital, New York, who has made a special study of the disease, does not believe nervous strain to be an etiological factor, many careful observers have noted a history of overstrain of the nervous system, as from severe mental shock, fright or worry, shortly prior to the onset of the symptoms. Gowers speaks of numerous cases occurring in Alsace-Lorraine after the Franco-German war. Many writers report cases immediately following severe burns and other accidents, long and difficult confinements, suddenly hearing bad news, after intense grief or other emotional disturbance. My first case, referred to above, was said to have developed the symptoms after becoming greatly excited on hearing the "Dead March in Saul" played at the funeral of a distinguished person in the little town in England where she lived. Rheumatism and epistaxis have been noted as antecedents in a significant number of cases.

Symptoms.—Charcot's list has been little changed by subsequent writers, save that additions thereto have been made. It is as follows: Primary or cardinal symptoms: Tachycardia, goiter, exophthalmos, tremors. Secondary symptoms are grouped under the various systems:

Nervous System: Convulsions, modifications of the psychic state, emotionalism, irritability, von Graefe's sign, Stellwag's sign.

Digestive System: Vomiting, diarrhoea, flatulence, jaundice.

Respiratory System: Cough, dyspnoea, anginal pains in chest, neuralgia of chest.

Skin: Flushing of skin, especially of face and neck; brownish pigmentation of skin of face, neck, sides of chest, abdomen, lumbar region and flexures of body; urticaria; sensations of heat and cold; increased perspiration; lessened electrical resistance; scant hair, and scleroderma and leucoderma.

Urinary System: Polyuria, transitional albuminuria, glycosuria.

Genital System: Suppression of periods and impotence.

To these may be added many other symptoms, 75 symptoms and complications having been noted. I will mention a few of the more important: Pulsation of cervical vessels is a marked symptom; palpitation, which is distinct from the tachycardia and often causes patients more distress.

Emaciation: Oedema, localized or limited to the lower extremities. Paresis, general muscular weakness of knees, aphonia and abasia. Local paralysis, as ptosis, Bell's paralysis. Special affections of ear, as throbbing in ears and sensitive auricles.

Pains: Characteristic superficial pains of palms of hands, tips of fingers, tips of heels and toes, accompanied by sensitiveness of these parts. Headaches of the migraine type, vertigo of the aural type, bulimia, itching of skin and epistaxis during as well as before the disease.

A few words as to some of these symptoms, any one of which may precede all the others by several years. Dr. W. H. Thompson reports two cases where trembling of the hand with inability to write preceded all other symptoms by two or three years.

The goiter may be soft, globular and elastic to the feel, or hard, firm and nodular; perhaps the latter where of long standing. The right lobe is often the larger, and this is probably to be accounted for by the fact that this lobe is normally the larger, and disease only accentuates the disparity. The gland is seldom as large as the ordinary parenchymatous goiter.

The exophthalmos may vary from a slight staring expression to a marked protrusion of the eyeball with inability to close the eyelids. It may also be confined to one eye. In this connection let me refer to von Graefe's and Stellwag's signs. The

former consists in a lagging of the upper lid in downward movements of the eye, so that the sclerotics are visible. Stellwag's sign is an increase in size of the palpebral fissure, not due to the mechanical results of the exophthalmos and not in proportion thereto, but to a reflex excitability. Amongst eye symptoms, Moebius mentions an inability to converge for near objects. Slight weakness of the external recti sometimes produces double vision of one side. Complete *ophthalmoplegia externa* has been rarely observed. No true visual defects belong to exophthalmic goiter. A painful spasm of the orbicularis palpebrarum has been known to dislocate the eyeball. Mackenzie and Ord report a case of loss of eye through painful ulceration and perforation before the patient realized that she should consult a physician.

The circulatory disturbances are most marked and constant. That heart beats are always increased in number and may vary from 90 to 100 per minute in mild cases to 160 or more in severe cases. The tachycardia of Graves' disease is unlike any other tachycardia, in that it never calms down, even in sleep, though excitement or exercise may increase the pulse rate. It may continue for years with little or no resulting organic change in the heart. There may be, however, cardiac hypertrophy or dilatation and a systolic murmur at the base. The carotid pulsation is very marked. The heart's action may be regular or irregular, the latter being an unfavorable sign. There is no characteristic pulse of Graves' disease. The tachycardia, palpitation and carotid pulsation are all pronounced and trying symptoms.

The appetite is often ravenous though there may be anorexia. Excessive thirst is noted. Vomiting, regardless of the ingesta, may be very troublesome. The same may be said of the diarrhoea. The latter is likely to be intermittent, is free from colic, very unyielding to treatment and often ceases spontaneously after a few days. It is a very exhausting complication and, with the vomiting, is responsible for much of the emaciation.

The albumen of Graves' disease is transitional and casts are seldom found in the urine.

The *oedema* may be a localized swelling, not dependent upon gravity, as a swelling of the eyelids, which may persist after all other symptoms have subsided. Or, it may be confined to the lower extremities. It may be a true pitting oedema, or a firm non-pitting, and possibly mucoid, oedema, though the latter type

does not yield to thyroid extract medication. Oedema is not necessarily considered an unfavorable symptom.

The temperature as a rule is not elevated, though subjective sensations of heat and cold are very common.

The invariably diminished electrical resistance found in Graves' disease, and thought by Charcot an important aid to diagnosis in the incomplete forms, has been accounted for by the great moisture of the skin; but Wolfenden, of London, found the phenomenon quite as marked when the skin had first been carefully dried, and considers the diminished electrical resistance due to a vaso-motor dilatation of the skin capillaries.

As to the *nervous system*, a change in the mental state is spoken of by many as amongst the early symptoms. There may be irritability, excitability, restlessness, wilfulness or spitefulness. These patients are often easily disturbed by any unusual occurrence. Depression is common; melancholia and mania sometimes develop in cases progressing unfavorably.

Tremors may be limited or extensive. They are more noticeable if the patient be examined standing. In addition to the apparent trembling, the patient often complains of an inward sensation of trembling. This symptom may be seen first in the eyelid, tongue, face or lip muscles. The arms are more likely to be affected than the legs. If the patient be asked to hold the extended hands in front of her at arms length, the typical tremor will often be evident. It is in no sense a rhythmic tremor, and is most pronounced on voluntary movement, contrary to the tremor of paralysis agitans. It is a tremor of vibratory movements of small amplitude, resembling that of overtaxed muscles, and faster than senile tremors.

Paresis.—Under this heading one notes weakness of knees; they may even give way and throw the patients, but these rise quickly from such a fall, showing no paralysis. As stated already, temporary aphonia and abasia may also occur.

In addition to the superficial *pains*, muscular pains may be present and be mistaken for rheumatism, but the parts are not painful on deep pressure and show neither heat nor swelling. A common seat of pain is in the muscles of the neck, especially the sterno-mastoid and upper part of trapezius.

Varieties.—Graves' disease may be acute or chronic, complete or incomplete. Numerous cases have been reported as lasting

from a few days to several weeks, followed by recovery. The malady has been equally known to terminate fatally after a few weeks. Most of the cases, however, are of some years' duration. Relapses are not uncommon. Diagnostic difficulty only arises naturally in the incomplete forms, some of which remain incomplete, and others later develop all the classical symptoms. S. West, of St. Bartholomew's Hospital, London, reports a case where the thyroid began to enlarge when the patient was 14, the palpitation appeared at 18 and the exophthalmos at 22. Marie speaks of complete and incomplete forms, including in the latter those cases with neither goiter nor exophthalmos and which he supposes to be more amenable to treatment.

A. Maude says there is a gradual growth of opinion that the symptom complex is due to the production, or non-elimination, in the thyroid itself, of some toxin which acts on the whole nervous system.

Attention has been called to the fact that the immediate effects of terror described by Darwin and Sir Charles Bell closely resemble the symptoms of exophthalmic goiter. At any rate it is well known that Graves' disease *may* follow a sudden shock to the nervous system, and this fact makes one hesitate to ascribe an invariable primary rôle to the thyroid. Besides, the fact remains that the disease may exist for a term of years without goiter, and go on thus to a fatal end, and that where the thyroid has been examined in these non-goitrous cases which have died from the disease, no abnormality was detected in the gland. This fact likewise makes one skeptical as to the position held by the thyroid toward the origin of the disease.

Dr. Wm. H. Thompson reports 28 cases of Graves' disease without goiter, amongst which two deaths occurred. He feels that the thyroid enlargement bears as secondary a relation to the cause of Graves' disease, as does the enlarged spleen to the malarial poison in some cases of ague. It has been claimed that the poison is first formed in the alimentary canal and then remains in the circulation, owing to the thyroid having lost its controlling power through excessive disturbance caused by the poison. Thompson feels that he has demonstrated that the disease is due to an autointoxication having its origin in the intestinal tract.

Moebius, Ballet and Enriquez have agreed that in Graves' disease there is a fundamental derangement of the thyroid gland.

Abadie, of Paris, strongly favors permanent stimulation of that portion of the cervical sympathetic which presides over the dilatation of the vessels of the orbit, thyroid body and heart, and considers the disease due to a nuclear lesion in the upper part of the bulb.

Moebius refers to the fact that the symptoms of myxoedema are quite opposed to those of Graves' disease, and Byron Bramwell, of Edinboro', gives an interesting table contrasting the symptoms of the two maladies. Yet myxoedema is known to be in some cases a sequel to Graves' disease. Has the thyroid in these cases become exhausted from prolonged increased secretion to drop to a state of diminished function with atrophy? It seems on the surface a natural inference that if the symptoms of myxoedema are due to atrophy and deficient thyroid secretion, the symptoms of Graves' disease might rationally be ascribed to oversecretion. This theory gained some support from the fact that the administration of thyroid extract is said to have produced some of the circulatory symptoms of Graves' disease. The tachycardia produced by the extract is not, however, the true permanent tachycardia of Graves' disease.

The morbid changes accompanying the ordinary parenchymatous or cystic goiter bear no relation to those of exophthalmic goiter. The one is simply a goiter with the symptoms entirely those of mechanical pressure. In Graves' disease the goiter may not be apparent, and yet the constitutional symptoms may be marked. Indeed it is the symptoms, quite apart from the size of the goiter, which cause most anxiety. A person with a small sized goiter may be far more ill than one with a larger goiter.

L. F. Barker has referred to four theories as to the cause of the malady: 1. Some irregularity of the sympathetic nervous system. 2. That the seat of the disease is in the medulla oblongata. 3. That it is primarily a disease of the nervous system. 4. That it is a neurosis.

Charcot and others long ago claimed that the disease was primarily a neurosis, and this theory has not yet been disproved.

Duration.—The duration of the disease is variable. Cases of short duration may end fatally or recover, and many chronic cases have recovered under medical and surgical treatment. Relapses are not rare. Gowers speaks of a case which had three attacks at intervals of several years. Trousseau refers to a case

which during six years presented the symptoms six times. The question arises, were the "cures" complete? The liability, however, to relapses must be borne in mind in making a prognosis.

Death may occur from pressure of the goiter, from syncope, from exhaustion and wasting, marasmus, from heart failure or intercurrent disease.

Prognosis.—Hector Mackenzie and Ord report in a series of 33 cases, 8 deaths, 5 complete recoveries, 9 almost complete, 9 cases with considerable improvement, 1 *in statu quo;* and, remembering Dr. Mackenzie's exact methods, I can imagine the 9 "almost complete" recoveries would be classed by many observers as cures.

Buschan collected reports of 900 cases with a fatal result in 105. It seems difficult to find out how many cases have been really cured by a given treatment, inasmuch as one observer will not call a case cured which has a symptom left, and another, like Trousseau, speaks of an enlarged thyroid and some exophthalmos remaining in cases classed as cured.

Under recent methods of treatment, both surgical and serum, a larger per cent. of recoveries is being recorded. It remains to be seen how many of these cures are still to be called such a few years hence.

Pathology.—A. Kocher and Reinbach declare that there is no constant typical anatomical alteration. MacCallum, of the Johns Hopkins Hospital, says that in a series of 28 cases in that hospital alterations were found similar to those described by Farun, viz: *1st.* Changes in the alveoli, which vary greatly in size and show a remarkable folding in of the epithelium, so that the cavities have the appearance of sending off long diverticula, which again become cut off and form new alveoli. *2d.* Changes in the epithelium consisting in the alteration from the flat or cubical type to the high cylindrical form; the cells show abundant granules of fat in their protoplasm and frequently mitotic bodies. *3d.* Alteration in the colloid which consists chiefly in diminution in amount, and the ragged appearance of that which is present. *4th.* The vascular supply is extraordinarily rich, the veins especially being large and distended.

The persistence of the thymus and even hypertrophy of that gland have frequently been observed in cases of Graves' disease. Prof. Pouchet, of Paris, declares that the researches of various

French writers show that convulsive accidents like tetany are in close relation with the internal secretion of the parathyroids, and that this secretion is antitoxic while that of the thyroid proper is excito-nutritive.

Treatment.—Under an astonishing number of drugs and treatments many cures of Graves' disease have taken place. Apparently some have been spontaneous recoveries. Amongst the therapeutic measures tried with reported success may be mentioned the following :

Iodine applied externally, injected interstitially and taken by mouth ; potassium iodide, iodoform, ergot, belladonna ; iron, arsenic, sodium salicylate ; thymus gland extract ; hydrotherapy. Complete rest, diet, ice bag to thyroid and over sternum. Lately suggestive therapy is said to have been successful in some hands. Serum treatment, to which I will refer later.

Among the more modern treatments, the x-ray has been given a trial. During a period of eight months 57 cases were treated in the clinique of Prof. Bruns in Tuebingen with very unsatisfactory results.

Surgical procedures have also varied. The thyroid arteries have been ligatured with the purpose of causing atrophy of the gland. The isthmus of the gland has been divided. One lobe or a portion of one lobe has been removed. Exothyropexy was performed by Jaboulay. This consists in stripping the capsule from the gland and so fixing the latter in the superficial wound as to produce shrinkage from exposure to the air, and from thrombosis of the venous sinuses. Out of 14 cases so operated upon he had 14 sucesssful cases with no deaths. Later Jaboulay divided the cervical sympathetic upon the suggestion of Walter Edmonds. The 6 cases in which this was done were all benefited.

The operation now mostly done is the removal of a portion of the gland. Prof. Halstead, of the Johns Hopkins Hospital, has recently presented to you a most encouraging report of the result of the operation as practiced in that hospital, and has laid especial stress upon leaving *in situ* the parathyroid bodies. Prof. Kocher, of Berne, has had brilliant results. In the last series of 1,000 cases of goiter operations reported over a year ago, there were 52 for exophthalmic goiter. Of these but one died. I find no record of the number cured. He urges that cases be

operated upon before the typical goiter heart is developed ; I suppose that he means before organic changes have taken place, for the tachycardia and palpitation belong to the disease. Naturally, only those cases which had a well developed goiter would be likely to consult Kocher ; indeed he says he is not familiar with Basedow's disease without goiter.

The marked success of surgical interference is most encouraging, though it is rather soon in many of the cases reported to feel assured as to possible relapses.

Dr. Robert Abbe, in an article read some months ago before this Society, reported three cases of cures out of nine treated by radium, and Dr. Truman Abbe has lately reported much amelioration of symptoms by the radium treatment in severe cases refusing or unsuitable for operation.

While I should certainly be disposed to advise surgical procedure in suitable cases, the fact remains that in some very serious cases cures have been wrought by other treatments, and as there will always be cases which refuse operation, it is very interesting and encouraging to note the success of some other lines of therapy.

Moebius, Ballet, Enriquez and others have conceded that the symptoms of exophthalmic goiter are due to excessive or perverted secretion of the thyroid. Moyer says that if due to an abundant or toxic secretion, the only rational treatment consists in checking the secretion or neutralizing its toxic properties. Antibodies in the blood possibly neutralize the normal secretion, therefore the serum or blood of animals from which the thyroid gland has been removed, and in which these antibodies have been allowed to accumulate, should prove capable of neutralizing the excessive or perverted secretion in Graves' disease. Along this line experiments were conducted independently by Ballet and Enriquez in Paris and Lanz in Amsterdam. The former used the serum, the latter the milk of thyroidectomized animals. Encouraging results were obtained from both methods by Burghardt and Schultes, Goebel, Moebius and others, some using the serum and some the milk, the latter being found to have the same properties as the blood, but in a less concentrated form. The serum was administered hypodermically and also by mouth.

Tablets of entire blood, dried, of thyroidectomized animals have been used with reported cures in typical cases. More re-

cently, under the leadership of Moebius, such a serum obtained from thyroidectomized sheep has come into wide use and is sold under the name of thyroidectin, antithyroidin, etc.

Following in the line suggested by Ballet, Enriquez, Burghardt and Blumenthal, Drs. John Rogers and S. P. Beebe, of New York, have done most scientific and valuable work. Working upon the suggestion from Dr. Rogers, Dr. Beebe, of the Department of Experimental Pathology of Cornell University Medical College, who had been working on cytolytic sera, developed a serum by separating the nucleo-proteids and thyreo-globulin from the human thyroid gland, and injecting these bodies into the peritoneal cavities of rabbits and sheep. The inoculations are continued at intervals of from five to six days for about six weeks and the animals are then bled from the carotid. The serum thus obtained presumably contains an antibody or cytotoxin which is specific in its action on the thyroidal epithelium, and an antibody or antitoxin, for the thyreoglobulin, which is believed to be the active, and in diseased states, the toxic product of the gland. Beebe says, "The basis of the serum which I have prepared is the hypersecretion theory of the cause of exophthalmic goiter," and again, "The serum is based upon the theory that Graves' disease is a toxaemia and that the toxin in question is the thyreoglobulin." The normal thyroid secretion is toxic. We cannot yet say whether that found in the gland in Graves' disease is more or less toxic than that in the normal gland. Nor, is it possible to say absolutely whether there is a special toxin present in the diseased gland.

The peculiar physiologically active part of the gland has been shown by Oswald to be thyreoglobulin. This proteid normally contains as a part of its molecule a small amount of iodine, which by cleavage may be obtained as an organic iodine compound—iodothyrin. Beebe says :

"If we find that the administration of the antiserum causes an immediate and striking improvement in the toxic condition, we may reasonably infer that it is due to the neutralization of the toxin. In a few severe cases we have noticed a striking improvement in all the symptoms within 48 hours. Cases which show such a response belong to the acute variety. If the hypothesis regarding the antitoxic and cytotoxic properties, and their dependence upon the injection of thyreoglobulin and nucleoproteid

respectively, is correct, then we should find it advisable to vary the activity of the serum in respect to these two factors, in order to meet the indications in the various types of cases." Normal human glands obtained at autopsy are now used for preparing the serum. The serum treatment generally causes an increase in the per cent. of haemoglobin and the number of erythrocytes. I quote again from Dr. Beebe: "My previous work with dog-organs demonstrates that it is possible to develop highly specific cytotoxic serum from the nucleoproteids, and since these proteids from the thyroid gland are included in the injection, a similar property of the serum should be produced as in the former case.

Beebe and Rogers have had striking results follow the use of the serum preparations both from the normal and pathologic glands. Beebe does not think there is any radical difference between the two. He concludes that when all the conditions are weighed "it is fair to consider that the serum is an agent of considerable value in the medical treatment of exophthalmic goiter. It has been used in all manner of cases in which it was possible to make a diagnosis and in some in which the diagnosis was doubtful. Only a comparatively small per cent. of these cases was of recent development. A small per cent. of failures has resulted, a much larger number of improvements and an encouraging number of apparently complete cures." Dr. Beebe has lately told me that of the cases that have received the serum for the past six months at least half have shown marked improvement, but a longer time must elapse before any of these can be pronounced cured. It is also not too late for some to exhibit improvement which have not yet shown it. The rule in these chronic cases is a very gradual improvement.

I will conclude my paper by giving the history of a case of exophthalmic goiter which I am treating with the Rogers-Beebe serum.

Mrs. H., age 44, mother of three children, eldest 19, youngest 11. Not strong as a child and thinks her heart may have been weak, as she was not permitted to jump rope or indulge in other violent exercise. After 12 years of age she grew stronger and remembers no special illness. Her mother died of pulmonary tuberculosis when the patient was about 12. The father is still living and vigorous. Several brothers and sisters died very young. The paternal grandmother had a goiter apparently of the paren-

chymatous type, for many years, dying in old age of some other malady. One cousin of the patient had a goiter for a couple of years, which disappeared during a severe attack of tonsilitis ! She had previously used iodine externally.

In November, 1895, the patient gave birth to a child ; delivery normal, but almost immediately afterward the patient's head began to ache, and eclamptic convulsions followed. She was unconscious ten or twelve hours and during that time had several convulsions. Had a fairly comfortable puerperium, but became conscious of the tachycardia as soon as she sat up, and remembers her doctor remarking that her pulse was 120 under any effort. The goiter was first noticed about two months after the birth of the child. Electrical treatment was begun at once and continued for some time with no benefit. Iodine was then used externally and internal medication given, of the nature of which the patient is not aware. The tremor of hands on making an effort followed soon after the goiter appeared. None of the symptoms seemed to respond to medication. However, she gradually adjusted herself to her limitations, but the goiter, tachycardia and tremor persisted, and menstruation occurred irregularly, sometimes too frequently, and again often with periods of amenorrhoea. Nine years ago she had a course of thyroid extract, with no benefit. After that she gave up treatment, but was able to attend to her household duties. Six years ago she consulted me in the early months of pregnancy, as her heart was giving her much uneasiness. By the fifth month the symptoms were so aggravated, especially the cardiac, that, as rest in bed and medication failed to relieve them, I consulted Dr. I. S. Stone, who agreed with me as to the gravity of the case, and the justification for the procedure, and I induced labor with prompt relief to all symptoms. She gradually recovered her former state and later was much benefited by a summer on the Maine coast. About a year ago she realized that her legs were more swollen and found herself very easily tired, but consulted no doctor. Late last summer she collapsed. I was away, but first Dr. Foye and then Dr. Ada Thomas took care of her. The patient was in a critical state for several days. The heart was badly dilated and there were evidences of failing cardiac compensation—legs much swollen, and marked pulmonary oedema. Under complete rest, ice bag to goiter and sternum, infusion of digitalis and potassium citrate, she gradually

pulled up, and was able to sit up part of the day at the end of three weeks, at which time I returned from my summer holiday. Since then she has never recovered her former level. Much of the time has been spent in bed, walking has been almost impossible, she has had infusion of digitalis most of the time, and sometimes potassium citrate as well for the oedema.

Early in February I called Dr. Claytor in consultation. At this time she was spending most of the time in bed; she was fairly well nourished, her complexion was muddy, flushing of face and neck was marked. The goiter was fairly soft and elastic, larger on the left side; the circumference of the neck was $14\frac{3}{4}$ inches; pulsation of the cervical vessels marked; slight exophthalmos. Von Graefe's sign was not present but Stellwag's sign existed. Tremors were evident in eyelids, lips and face muscles when she spoke. Hand tremors were present but not so marked. The heart beats ranged from 120 to 130 with patient at rest; apex beat was $1\frac{1}{2}$ inches out; no murmur heard. Heart's action irregular in force and rhythm, a heaving impulse being visible over the precordium. She had a dry, troublesome cough which interfered with sleep. The legs were very oedematous. They pitted superficially but the deeper tissues were firm and suggestive of a mucoid oedema, possibly the result of long-standing oedema. Râles were heard over the bases of lungs, especially the left. She was emotional and agitated.

Dr. Claytor and I discussed the advisability of operation or using the Rogers-Beebe serum, and agreed on giving the latter a trial, particularly as she was averse to operation.

March 26. First inoculation, $\frac{1}{2}$ tube or $\frac{1}{2}$ cc. was injected into arm. No apparent reaction.

March 27. Second inoculation, $\frac{1}{2}$ tube, into other arm. Slight swelling and erythema appeared some hours later around the site of inoculation.

March 29. $\frac{3}{4}$ of a tube given. Nine or ten hours later she became very emotional and dyspnoeic. The day following there was considerable redness and swelling of the arm. By this time she was complaining much of the swelling of her legs, which allowed very little bending of the knees and prevented her sitting up.

March 31. Inoculation, whole tube, with resulting redness and swelling of arm and hand. The oedema of lower extremities

now had extended up to the vulva, lower part of abdomen and back, but the pulmonary oedema was less. Potassium citrate, grains 20, three times daily, was given in addition to the infusion of digitalis, of which she had been taking 2 drachms three or four times daily.

April 2. Inoculation. Marked local reaction and all symptoms seemed aggravated within a few hours. I was sent for, as she was much alarmed. I think this very definite reaction is partly to be accounted for by the fact that the swelling and redness of the arm after the previous inoculation had not altogether subsided, and this injection followed too soon. The day following this inoculation, swelling and erythema were marked in both arms.

April 5. Oedema less, patient in better spirits, sat up part of the day. Potassium citrate discontinued.

April 7. Inoculation. Heart beats, when patient at rest, down to 100 per minute. Less pulsation in cervical vessels.

April 13. Inoculation. Slight reaction, patient pretty comfortable.

April 18. Patient complained much of cough, nothing fresh to be heard in chest. Pulse rate 90; heart beats less tumultuously. Circumference of neck, 14¼ inches. Legs more oedematous and potassium citrate resumed.

April 20. Pulse 108, considerable reaction after inoculation of 18th.

April 22. Inoculation. Patient went out for an hour's drive, first time in a month. Cough very troublesome, legs less swollen and less pulmonary oedema. Ice bag to thyroid ordered for cough. Heart rate 110. Potassium citrate left off.

April 26. Inoculation. Slight reaction. Cough better.

May 1. Inoculation. No râles to be heard in chest, cough better, legs still swollen but less so. A blowing systolic murmur heard at apex of heart. Patient looking much better and more cheerful. Circumference of neck, 14 inches. Patient going out daily in wheeled chair.

May 6. Inoculation. Reaction slight. Cough less troublesome; patient sleeps well. No heart murmur to be heard. Pulse rate, with patient sitting up, 116.

May 11. Inoculation. More reaction this time. Cough decidedly better.

It is now less than two months since this treatment was started.

The disease is of long standing, and the serum works slowly in these cases; but, comparing the results with those obtained in similar cases, there is at least reason to hope that later I may be able to report a very considerable improvement. To sum up the results so far: The patient is in better spirits and less agitated; the goiter has diminished ¾ of an inch in circumference; the oedema of the lower extremities is less and the pulmonary oedema has disappeared; the heart rate is better, generally below 120, and frequently between 102 and 114; the irregularity is not so marked, and the heart's action less tumultuous; the cervical pulsation is less; the cough is decidedly less troublesome. After another six weeks of serum treatment, the patient is to go to the seaside, where, I hope, the evidences of the good accomplished will become more pronounced, as has been the case in other instances. The treatment will probably be continued all summer.

POINTS IN COMMON IN THE CLINICAL HISTORIES OF EXOPHTHALMIC GOITER AND MYXEDEMA.*

By P. S. ROY, M. D.,

Washington, D. C.

The points in common in these two diseases are very interesting to me because of the doubtful etiology of both and the many points of difference in their clinical histories. Both diseases have a glandular and nerve theory regarding their etiology which I will briefly state. The glandular theory of exophthalmic goiter is that it is caused by excessive secretion of the thyroid gland; the nerve theory ascribes the etiology of exophthalmic goiter to disease of the restiform body or to disease of the pneumogastric nerve. The latter is Hirt's classification. When we think of the close anatomical relation of the pneumogastric nerve to the restiform body we can easily understand that both may become diseased.

For myxedema there is also a glandular and a nerve theory: the glandular etiology attributing the disease to loss of thyroid function, the nerve theory classifying myxedema either as a disease of the spinal nerves or sympathetic centers. It is a great

*Read before the Medical Society, May 15, 1907.

mistake to suppose that the Basedowian triad, viz : tachycardia, exophthalmos and goiter, occur in every case of exophthalmic goiter. Tachycardia is always present ; goiter is present in three-fourths of the cases, and exophthalmos in one-half. And again, we may have all the cardinal symptoms at one stage of the disease, and then one or the other of the symptoms may disappear. This is clearly shown by the statistics of Paessler, who in some sixty cases found tachycardia, goiter, exophthalmos and tremor occurring jointly in only eighteen cases.

The first point in common in the two diseases is that both can almost be termed diseases of women. We know there is a close relation between thyroid and uterine functions ; both diseases occur about five times as often in women as in men.

Probably at this time I had better give my personal experience in these diseases. I have had under my care two cases of myxedema (one at the present time) and some six cases of exophthalmic goiter: when I say exophthalmic goiter I mean cases which at some time had the triad symptoms. The mental symptoms are much in common in the two diseases. The observer is at once aware in both that he is dealing with neurotic conditions—the mentality is never normal and the mental suffering at times is acute. The sufferer in either disease will tell you that his head does not "feel just right." With the exception of sweating, the skin changes are much the same ; loss of hair, viteligo and scleroderma occur in both. Peterson recently recorded the occurrence of scleroderma and alopecia areata in a patient with exophthalmic goiter.

Of scleroderma I will speak more particularly. Hirt says scleroderma and myxedema are closely allied pathologically, and he made this statement before it was known that thyroid extract has almost magic curative action upon myxedema and always greatly benefits scleroderma. It has been observed by more than one writer that scleroderma is at least remotely related to exophthalmic goiter. So here we have a connecting link between the two diseases. There is another striking condition of the skin common to both : I have seen in both a sudden diffused redness covering the face and neck ; this may go and return many times in a day. Vertigo is a most distressing symptom in both, also intense headache. Hysteria is marked in both ; and the classical hysterical points of pain under the breast, and in the groin, are

rarely absent. Great muscular weakness attends both diseases, and I am not able to say whether the dyspnoea, which is identical in both, is due to muscular weakness or to an athyroidal condition. Hemorrhage from the mucous membranes, particularly the uterus, is another symptom attending both. Another marked symptom in common is edema, which is very frequent in exophthalmic goiter while we know it is constant in myxedema, and as I have seen it, and as it is described by others, is not boggy, does not pit on pressure, and reminds one of the resiliency of myxedematous swellings. It may become general, and the exophthalmic goiter patient develop myxedema. The fine tremor of exophthalmic goiter is often seen in myxedema. There are quite a number of minor symptoms common to both diseases. Even the therapy of the two diseases is sometimes the same, for there is a certain per cent. of exophthalmic goiter cases that improve under thyroid ; and we have no means, except by experiment, of telling when to give thyroid in exophthalmos.

It is hasty to conclude that the two diseases under discussion have exactly opposite etiology because thyroid cures myxedema and does not cure exophthalmos. To the point raised that thyroid often makes exophthalmic goiter worse, I attach but little importance. In such muscular weakness as is found in exophthalmic goiter I would expect thyroid to make the patient worse if it did not help the condition. Even in myxedema we often get very unpleasant effects from thyroid, and it has always to be given with great care. That exophthalmic goiter is due to excess of the normal secretion of the thyroid is exceedingly doubtful.

Dr. Reid Hunt said that he had been much interested in the papers, and was especially interested in the physiology of the thyroid gland. He had found a very delicate test for thyroid secretion, and was anxious to secure specimens of blood from the gland for experiment. The test has demonstrated one fallacy: it has commonly been supposed that the iodin-free constituents of thyroid secretion are physiologically inactive, whereas he has found that such constituents do have a low degree of physiological activity, which activity is much increased by the administration of iodin. Mention had been made of large parenchymatous goiters, which produce no symptoms except by pressure. These glands are rich in iodin-free secretion. Kocher has found that in such cases the administration of potassium iodid will be followed by symptoms of thyroidism, and was unable to account for

the phenomenon. It is explained by the affinity of thyroid secretion for iodin, with increase of activity after union with that element. The index in the symptomatology is not the size of the gland but the activity of its secretion.

Dr. Jas. F. Mitchell expressed his thanks for the papers. A striking point in exophthalmic goiter cases is the very great variability in the clinical pictures. He had seen an old man who had had a goiter for 30 or 40 years without symptoms, when suddenly the gland increased in size, soon followed by exophthalmos, tremor, etc. In another case, there had been no suspicion of goiter, until suddenly one night the patient was seized with palpitation, and on going to the mirror found that a goiter had appeared. The shortest case in his experience died in two weeks after the onset.

We are still uncertain as to just what faith may be placed in the serum treatment; the study is attended with many difficulties. Sera from different sources seem to differ as much as different families of the same bacterium, and special sera have to be made for each case.

As to the operative possibilities, Mayo has now over 200 cases and Kocher has reported 180; with this fecundity of work we should soon expect some definite results. A recent German paper has reviewed the statistics of the operative cases: mortality, 3 to 13 per cent.; failures, 3 per cent.; cures, 70 to 90 per cent. Among the cures, cases had been followed up for 7 to 15 years after operation. The great problem is, How much of the goiter should be removed? Shall we remove a piece of each lobe, or one entire lobe? The second lobe operation is dangerous. Mayo has shown that by leaving the posterior capsule *in situ* the danger of tetany is distinctly reduced, the blood vessels being left undisturbed and the nutrition of the parathyroids unimpaired. He himself has tried the method and found it easy of performance.

McCallum has found that tetany may be relieved by the administration of parathyroid extract from beeves; he has recently cured a case in this manner.

Dr. Claytor has long been interested in this subject. He had now under his care a patient who had recently had a very acute attack of hyperthyroidism. Some years ago she consulted Osler, and on his advice Halstead removed a portion of the gland, with great improvement, lasting for a number of years. At length the symptoms recurred, and Halstead declined a second operation. She then consulted Rogers, who put her on serum treatment with great benefit. She had recently come under Dr. Claytor's care, and the occasional use of the Rogers and Beebe serum had been continued. At present she was four months pregnant. Some weeks ago she became suddenly and alarmingly ill, with headache, high fever, dyspnoea, and tachycardia; her condition was such that he consulted with Rogers by telephone, and they

decided that the condition was due to thyroidism and that the use of the serum should be pushed. The examination of the blood showed no leucocytosis but the Widal reaction was present; typhoid fever, however, was excluded. 10 cc. of the serum was given; at first the temperature rose to 104, and all the symptoms were increased, but the next day the whole condition was ameliorated. The fever lasted 21 days, gradually declining under repeated doses of the serum. Some headache and nausea still remained, and Dr. Claytor had found it necessary to repeat the serum. He believes that the patient's life was saved by the serum.

An interesting feature of the case was the very slight reaction during the height of the disease, with marked reaction to the serum after the condition was improved. It seemed to indicate that, while the symptoms were severe, the need of the serum was so great that it was promptly neutralized, and no great reaction was observed.

Dr. Lee reported one case treated with serum. A woman, 45 years old, developed, two years ago, exophthalmic goiter. She was treated symptomatically, but ran down rapidly and so continued for some months. Last spring she had an acute exacerbation, for which the Rogers-Beebe serum was used. After several months, during which it was occasionally administered, all symptoms completely disappeared. For the past four months she has been well. The effects of the serum are best noticed in the very acute cases.

Dr. Hardin said that he did not in the least wish to detract from the good results obtained in the cases reported, but it seemed only fair to say that in the past year he had seen two cases which at times developed acute toxaemia in the course of the chronic form of exophthalmic goiter. Both seemed to be moribund but both recovered without the use of the serum.

Dr. Jas. Dudley Morgan believed that most physicians have seen cases in the class mentioned by Dr. Hardin—the patient very ill but recovering without special treatment. Dr. Morgan had seen a number of such cases. He called attention to the sulphuric-acid treatment which had been suggested to him by a physician in Montgomery County. At Dr. Morgan's request, it had been tried by Dr. D. G. Smith in a number of cases at Emergency Hospital with a considerable degree of success. One woman who had been unable to work for a year returned to work after a very few months of the treatment.

Dr. Shute referred to the frequent occurrence of a dry keratitis by reason of the constant exposure of the cornea in exophthalmos. The treatment is to push back the eye with compresses and to apply some bland protective, such as vaseline or olive oil.

Dr. Wilson said that in her paper she had referred to a case of Mackenzie's in which the eye was destroyed by corneal ulceration.

ABDOMINAL PREGNANCY; EIGHT AND A HALF MONTHS' GESTATION; PUERPERAL ECLAMPSIA; COELIOTOMY; RECOVERY OF MOTHER; CHILD LIVED THREE DAYS.*

By DUFF G. LEWIS, M. D.,

Washington, D. C.

On the evening of Nov. 8, 1906, I was requested by Dr. Philip S. Roy, of this city, to see with him Mrs. D. She was in her ninth month of pregnancy, and gave the following history:

Age 22, married, multipara, well-developed, brunette. Previous to her pregnancy she had enjoyed good health, and was a milliner by occupation. During her pregnancy she suffered much discomfort as her term approached, from pains in the lower abdomen and various nervous disturbances. A few days previous to my first visit, she noticed that her sight was failing and that her ankles were swelling, whereupon she sent for Dr. Roy. Before he could answer the summons she was seized with convulsions and had become totally blind. When he arrived she was unconscious and having seizures every few minutes. This being the first time she had consulted him, he saw at once that something radical had to be done. He gave a quarter of a grain of morphine, hypodermically, and sent for me with a view to having her removed to a hospital and inducing labor as soon as possible.

When I arrived she was in a deep stupor, the morphine having controlled the convulsions; after a hasty and very casual examination I urged that she be taken to a hospital at once, which was done. She reached the George Washington University Hospital at 9 P. M., and, without giving an anesthetic, I attempted to start labor by introducing a soft rubber catheter into the uterus. I found the uterus very high up and to the front. The catheter slipped out as fast as I inserted it, so I contented myself with leaving a strip of sterile gauze in the womb, hoping that contractions would start up and thereby induce labor. We examined a catheterized specimen of her urine, and found it loaded with albumen and containing many fine granular casts. I am indebted to Doctor Montgomery, of the hospital staff, for his untiring efforts in the patient's behalf while she was in the hospital. I

* Read before the Medical Society, May 29, 1907.

may also say here, that this patient required constant attention from the nurses the greater part of her stay in the hospital, owing to her mental condition, and to their untiring skill and zeal, we owe a great deal.

During the first night she had a return of the convulsions, and Dr. Montgomery resorted to various measures to control them. The next morning her condition was unchanged, and no signs of labor being present, I decided to empty the uterus, *accouchement forcè*. When I examined her under the anesthetic I found the uterus empty and the pregnancy to be extrauterine. I called Dr. William P. Carr in to confirm my diagnosis and he kindly assisted me in the operation. She was removed from the delivery room to the operating room, and I delivered a living girl baby through an abdominal incision. The placenta was attached anteriorly, necessitating the incision going directly through it. There was a free flow of blood which was soon controlled by forceps. The loss of blood was an advantage rather than otherwise owing to the eclamptic condition. I found the placenta attached to the abdominal wall anteriorly, and to the mesentery and intestines. An effort was made to separate it, but we decided it was safer to leave it *in situ* and let nature throw it off. Accordingly, with a continuous suture I sewed the cut placental edges to the incision, packed the cavity with gauze, and returned her to bed. The whole time consumed in the operation was thirty minutes. The child was a very poorly nourished baby with one-half the lower jaw absent and both feet very much deformed. Fortunately for the child it lived only three days.

I watched the mother with considerable anxiety, as the outlook seemed very unpromising with her kidneys involved, and the increased amount of work which would necessarily be thrown on them in the sloughing of the placenta, etc. Her mental condition was very bad. She required the constant attention of two trained nurses for ten days or more, when she regained her mental equilibrium. The placenta had practically by this time all come away, and her recovery was assured. She ran a septic temperature for a week or more. On the third day her urine was free from albumen and kidneys acting well. Among the other interesting features of the case was the absence of any changes in her breasts before or after delivery. She made a good recovery and left the hospital four weeks from the time of admis-

sion. I have examined her several times since she left the hospital and found her pelvis practically free from adhesions, and her condition normal.

Dr. Roy rendered valuable assistance throughout the whole time of her sickness, especially looking after the diet and medication.

Dr. Roy added the following: We cannot always tell the extent of kidney and liver damage in these cases, but when the urinary analysis shows casts, albumen and a low per cent. of urea the treatment should be that for acute nephritis. The use of the stimulating diuretics, viz: digitalis, caffein, diuretin, juniper, or even large quantities of water, during the period of oliguria is to be condemned. The kidney should be relieved of strain as much as possible by diet, diaphoresis and hydragogue cathartics. The hydragogue cathartics are especially valuable in these cases in preventing a reversal of normal intestinal osmosis, which is toward the intestines. It is known that the liver stands in the way of the ingress of poisons and turns much noxious material back into the bowel for excretion, but if the normal osmotic current for excretions is reversed and flows into the blood from the intestines the poison excreted by the liver reenters the blood from the intestines with new virulence and toxicity. It is in these intestinal osmotic disturbances that oxybutyric acid is formed. Magnus Levy believes this toxin is formed in the liver.

When the kidneys begin to act freely, which they do in a week or less, if the patient does well, then an abundance of water should be given to clear the tubules of inflammatory products. The diet must be based upon our knowledge of metabolism, thereby avoiding the substances we know are excreted with difficulty in diseases of the kidneys. Animal extracts and broths rich with creatinin are eliminated with difficulty by the kidneys. Phosphoric acid, another substance of difficult elimination, is found in large quantities in milk, our most useful diet in diseases of the kidneys. This difficulty in milk diet can be overcome by giving the patient sixty or more grains of calcium carbonate daily, which unites with the phosphoric acid in the intestinal tract, and also by limiting the milk to three pints daily with a half pint of sterilized cream. The lime also prevents the formation of phosphuretted hydrogen, which is one of the causes of acute yellow atrophy of the liver. Urea and inorganic sulphides are eliminated

with difficulty by diseased kidneys, and this is another reason why the quantity of milk should be limited to the quantity named —as both of these substances come from protein—three pints of milk will furnish the system daily sixty grains of protein, an adequate quantity for the needs of the system for two or three weeks, and in that time a great improvement in the kidney may be expected.

Hippuric acid is made synthetically by the kidneys from benzoic acid and glycocol; this is a strain upon the diseased kidney that can be prevented by a diet eliminating all foods containing benzoic acid, such as green vegetables, fruits with kernels, cranberries; condiments of all kinds are bad—pepper, mustard, ginger, onions, radishes and others. Coffee and tea may be given in weak infusions. A return of the normal quantity of urea, about eight grains to the ounce, is sufficient reason for giving a more liberal diet.

In the case reported, the urea in first analysis was three grains to the ounce, gradually in three weeks reaching the normal. VanNoorden warns against surgical dressings containing iodoform in diseases of the kidneys. He and others have seen a maniacal state of poisoning result from it. This condition was observed in this patient after using iodoform. Hyoscin did not quiet the patient; heroin aided a little. The period of restlessness lasted about ten days. With the exception of cathartics and diaphoretics—on the first few days after the operation, until the kidney began to act—a high enema when necessary, no medication was used except giving three times daily fresh albuminate of iron made by adding ten drops of the tincture of iron to one third glass of egg-albumen water.

Certainly there is much yet to learn about the toxemia of pregnancy. The condition of eclampsia not only presents kidney but liver changes also, all of which are attributed by Bouchard to increased toxicity of the blood during pregnancy. The surest preventive in these cases is to examine the urine often, to note the excretion of the products of metabolism that come from protein molecules, viz: urea, ammonia and sulphides. A marked lessening of the urea, a change from the normal in the sulphides, or an increase in the excretion of ammonia, each points to danger, if constant, great danger without albumen in the urine.

A few more points can be added concerning ammonia, cathar-

tics and chloroform anesthesia. Ammonia formed in the system in the normal liver is converted into urea; the damaged liver cannot do this, hence another necessity for limiting the quantity of protein ingested. Cathartics, if not complete in action, may do harm, for they carry the partly digested food from the small intestine to the large, which is anaerobic and therefore favors intestinal putrefaction. A high enema should be given, as in the case reported. The danger of chloroform is in its combining with lecithin, a phosphorus-containing body, making the danger of acute yellow atrophy greater. Already attention has been called to phosphuretted hydrogen and its relation to acute yellow atrophy.

Dr. Jos. Taber Johnson said that doctors may not only be fooled into attempting to deliver a woman when the fetus is not in the uterus, but he had seen in consultation a woman who was trying to be delivered with a doctor's help when there was no fetus present at all. He had seen another case where three or four doctors were waiting for the woman's delivery, while the condition was an ovarian tumor, which was subsequently removed.

An interesting point in Dr. Lewis' case was the occurrence of eclampsia in an ectopic pregnancy. It would be interesting to trace the etiological factors of such an accident when the pregnancy is extrauterine.

As to the operative procedure, Dr. Johnson commended the wisdom of leaving the placenta until spontaneous separation occurs. The tendency of many is to treat the placenta as if it were so much pus, to be gotten rid of as soon as possible. The majority of cases so treated die. He congratulated Dr. Lewis upon his successful management of the case.

As to the time for operating in such cases, Dr. Johnson has been in several consultations in which nearly every one advocated putting off the operation until the fetus became viable. The statistics show that most extrauterine children are deformed in some way and that most of them, if not still born, quickly die; so that the argument not to wait is very strong. An ectopic pregnancy fetus is, then, "not enough account to be taken into account," and the longer the operation is delayed, the greater the danger to the mother.

Dr. Lewis' operation was remarkable in the necessity of cutting through the placenta.

Dr. Wood wished to call attention to the fact that incision through the placenta entailed no loss of blood to the mother, as the placental blood is entirely fetal.

Dr. Shute remembered but little about the case. An optic

neuritis was present. The blindness was undoubtedly toxic and due to uremia. He thought the prompt operation probably saved the patient from optic atrophy and permanent blindness. He remembered another case, that of a woman who had been recently pregnant and had failing vision at the time of her delivery. She went from oculist to oculist, and finally came to him; he found she had albuminuric retinitis. He sent her back to her own physician with the advice to treat her for the kidney disease. Later she died. It is as important to examine the eye ground as the urine.

Dr. Roy said that his patient can now see as well as ever. It is very important to consider well the diet for these cases. One should exclude from the diet everything containing metabolic irritants to the kidneys, especially beef extracts and broths containing creatinin.

Dr. Lewis said that the patient after operation had some mental disturbance, which Dr. Roy thought was aggravated by the iodoform packing that was used. Dr. Lewis had never before seen any such effects from iodoform.

Dr. Roy said that both von Jaksch and von Noorden caution against the use of iodoform and mention cases of mania caused by the drug.

Dr. Wm. A. White said that there could be no doubt that iodoform can produce mania. He, himself, had seen only one case in which there was toxic delirium, disorientation, etc.

Dr. Vaughan had seen one case of iodoform mania. A patient with a perineal section, packed with iodoform gauze, developed both delirium and eruption. He quickly recovered after the gauze was removed.

Dr. Hagner had seen a case of osteomyelitis in which the wound had been packed with iodoform gauze. There was hyperpyrexia, delirium, and iodine in the urine.

Dr. Hickling had seen a case of iodoform poisoning with delirium caused by injections of iodoform emulsion.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, May 1, 1907.—Dr. D. K. Shute, President, in the chair; about 35 members present.

Dr. D. S. Lamb, for the Editorial Committee, called attention to the reprints of the speeches at the Thompson dinner, which were ready for distribution. Dr. Cook reported that the sub-committee to prepare a special copy of this reprint for Dr. Thompson had completed its work, and that the funds at its disposal were exhausted. The sub-committee was discharged.

Dr. D. S. Lamb presented specimens of 1. Miner's lungs (for Dr. Arthur of Old Soldiers' Home); 2. Acute thyroiditis. Discussed by Drs. Morris, A. F. A. King and Chappell. See pp. 243 and 244.

Dr. Hall read the paper for the evening. Subject: "Syphilis hereditaria tarda." Discussed by Drs. Butler and Hagner.

[In consequence of the meeting in Washington of the Triennial Medical Congress, the Society adjourned over the meeting of the 8th.]

Wednesday, May 15.—Dr. Shute, President, in the chair; about 65 members present.

Dr. Mackall, for the Committee on Relations of the Medical Society and the Medical Association, read the Committee's report, which was accepted and the Committee continued.

Dr. D. S. Lamb reported the following cases, with specimens: 1. Aneurism of the Aorta. Discussed by Dr. J. D. Thomas. See p. 207. 2. Hour-glass Stomach. 3. Double Ureter.

Hour-glass Contraction of Stomach. — The specimen is from a dissecting-room subject and was removed by Dr. J. D. Murray. The contraction is about half way between the orifices. At this place the mucosa is thrown into large folds; the muscular coat is contracted and perhaps hypertrophied; and there are some peritoneal adhesions that apparently explain the contraction. The wall of the stomach at the cardia is quite thin; the pylorus is irregularly thickened and nearby is a small polypus and several flat sessile thickenings, probably of same character. The microscopic examination of tissue at the site of contraction showed some small infarctions in the submucosa. No clinical history can be obtained.

Double Ureter.—The specimen consists of the right kidney and the bladder with two ureters that open separately into the bladder, about one-third inch apart. Cases of double ureter are not uncommon. In the absence of actual disease the presence of the anomaly would not be suspected. The condition, of course, is congenital. The specimen was removed from a dissecting-room subject by Dr. Murray.

Dr. Anne A. Wilson read the essay. Subject: "Exophthalmic Goiter." See p. 295.

Dr. Roy read a paper on "Points in common in the histories of exophthalmic goiter and myxedema." See p. 310.

These papers were discussed together by Drs. Reid Hunt, Jas. F. Mitchell, Claytor, Lee, Hardin, J. D. Morgan and Shute. See p. 312.

Wednesday, May 22.—Dr. Shute, President, in the chair; about 55 members present.

Dr. Sowers presented the following report from the Executive Committee:

The Executive Committee, having considered the following matters, recommend as hereinafter quoted:

Letter from Geo. M. Kober, Chairman Building Committee, Washington Academy of Sciences, making the following inquiries with regard to a plan to erect a home for the Academy and its affiliated Societies:

"1. Is such a project desirable?

"2. If carried out, what accommodations will your Society require?

"3. If suitable accommodations can be furnished for your present and future needs, what rental can you afford to pay towards maintaining such a building?

"4. If it should be found that a building can be erected by private munificence, it will be necessary to raise an Endowment Fund of $100,000.00 for maintaining the same. The membership of the Academy and all of the affiliated Societies is over 3,000; would your Society be willing to contribute a *pro rata* amount towards such an Endowment Fund instead of paying rent?"

The Executive Committee endorsed this action as follows:

"1. Endorsed as advisable.

"2. Room large enough to accommodate 500 people and a small room to accommodate library, safe, etc.

"3. That the Medical Society would be willing to pay about $200.00 per annum for rent.

"4. This Committee is not prepared to submit a definite recommendation of the fourth interrogatory, but feels that the Medical Society can pledge itself to co-operate with the Academy of Sciences and other affiliated Societies in a public effort to raise the endowment fund referred to." Approved by the Society.

A bill proposed by Dr. E. L. Morgan "for the regulating of prostitution in Washington, D. C." "The Executive Committee respectfully refers the proposed bill to the Committee on Public Health for report."

An account for printing certain reprints of editorials appearing in the ANNALS; referred to the Executive Committee to determine what reprints are properly chargeable to the Society. "The Executive Committee recommend that these two bills be paid, but that in the future no similar bills shall be paid by the Treasurer without authority." Approved by the Society.

Dr. Wood, as a member of the Public Health Committee, raised the point of order that the measure presented by Dr. E. L. Morgan, looking to legislation for the regulation of prostitution, was not, under the Constitution, properly referable to that committee.

Dr. Mackall, taking the ground that the matter was not yet in the form of a legislative measure and required investigation as to conditions existing in this city, moved that the paper be referred to the Public Health Committee. Seconded.

Dr. J. P. Miller, offered as an amendment that the result of the investigation proposed be incorporated in the annual report of the Public Health Committee. The motion and amendment were carried.

Dr. C. S. White reported a case of Perforating Ulcer of the Stomach; operation. The patient was presented. Discussed by Dr. Carr and Van Rensselaer. See p. 292.

Dr. Bishop read the paper for the evening. Subject: "Electricity as a factor in the treatment of disease." Discussed by Drs. Wm. A. White, Butler, Roy and Reyburn.

Dr. Wood reported a case of Filatow-Duke's Disease, or The Fourth Disease. Discussed by Drs. Chappell, Kober, S. S. Adams, G. Lloyd Magruder and E. L. Morgan. See p. 289.

Wednesday, May 29.—Dr. Shute, President, in the chair; about 70 members present.

Dr. Woodward called attention to a conference of representatives from various Milk Commissions of the United States to be held during the meeting of the American Medical Association at Atlantic City, and moved that the President be authorized to delegate a representative from the Society. Carried. The Chair appointed Dr. G. Lloyd Magruder.

Dr. Wellington reported the following cases, with specimens: 1st. Sarcoma of kidney, removed from child four years old. Discussed by Drs. G. L. Magruder and Hagner. 2d. Hair-pin with calculus from child's bladder. Discussed by Drs. Acker, G. L. Magruder, Hagner and Vaughan.

Dr. D. G. Lewis reported a case of Abdominal Pregnancy, eclampsia at 8½ months, coeliotomy, recovery of mother. Discussed by Drs. J. Taber Johnson, Wood, Shute, Roy, Hagner, Vaughan and Hickling. See p. 315.

Dr. Wm. A. White read the essay for the evening: "The Nature of Insanity." Discussed by Drs. Hickling, P. C. Hunt, I. W. Blackburn, Wood, Vaughan and Chappell. See p. 263.

Semi-annual Stated Meeting, Monday, July 1, 1907.—Dr. Shute, President, in the chair; 21 members present.

The following amendments to the By-Laws were adopted:

"No paper read before the Society shall be allowed to consume more than twenty minutes in its delivery, and the presentation of a case or of a pathological specimen shall not be allowed to consume more than ten minutes; and in the discussion of a paper, case or specimen, no member shall be allowed to speak more than ten minutes or to speak more than once, except the member reading the paper or presenting the case or specimen, who is entitled to close the discussion, and except in cases in which the regulation is waived by vote of the Society: Provided, that these restrictions shall not apply to invited guests of the Society." Ayes 16, noes 8.

"A member desiring to publish elsewhere than in the WASHINGTON MEDICAL ANNALS any paper that he has read before the Society, shall be required, unless he publishes his paper in regular order in the ANNALS, to furnish to the Editorial Committee an abstract of said paper within two weeks after it has been read." Ayes 10, noes 6.

Amendment to By-Laws. XI—Of a quorum. Amended by substituting "fifteen" for "seven." Adopted unanimously.

The Treasurer was granted authority to pay bills for the Historical Committee as follows: For engravings, $56.00; for postage, $10.00.

It was ordered that the regular weekly meetings be resumed on the first Wednesday of October next.

The Chair announced the following committee to prepare suitable resolutions of respect upon the death of Dr. John S. McLain: Drs. H. A. Robbins, E. L. Morgan and N. P. Barnes.

THE MEDICAL EXAMINERS OF THE SOCIETY.—The book kept by the Board of Medical Examiners up to 1869 is missing. If any member knows where it is or is able to suggest where it is, the Historical Committee would be obliged to him for information.

MANUSCRIPTS OF ARTICLES written by members of the Society, but not read at its meetings, have several times been offered to the Editorial Committee for publication. The Committee has felt compelled to decline publication until after such papers should be read before the Society, or unless the author was willing to pay for publication at the estimated rate, namely, $1.50 per page. Several papers have thus been published at the expense of the authors. Of course if the Society authorizes publication without charge, of papers not read before it, the Committee will gladly obey instructions.

THE EDITORIAL COMMITTEE is prepared to publish abstracts of the proceedings of the other medical societies of the District. If these abstracts are typewritten, it will very much lessen the labors of the Committee.

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EDITORIAL COMMITTEE.

D. S. Lamb, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W.
Murray Galt Motter, A. M., M. D., . . . 1841 Summit Place.

Editorial.

THE PERSONAL HISTORIES OF MEMBERS.

In the latter part of September, 1906, a blank form of request for information was sent to each active member of the Society, the form to be returned, filled out, to the Historical Committee. Many members have thus far paid no attention to the request. In some cases similar blanks have been sent a second time, asking for definite facts; some of these have been returned, others have not.

The Committee wishes to have it distinctly understood that in the forthcoming "History of the Society" the personal records of members will appear, and these records will be based partly on the records of the Society, partly on published biographical sketches, and partly on the statements of the members themselves. If the Society record in any case is meager, if there is no published sketch, and if the member makes no written statement, it is obvious that the record in his case, in the "History" will be incomplete; but the fault will not be with the Committee. It is hoped, therefore, that those members who have so far neglected the matter will promptly attend to it; there is such a thing as a "last call to dinner."

It may be added that the Committee has consulted the following publications, namely: *Who's Who in America; American Men of Science; Atkinson's Biographies*, 1874 and 1880; *Stone's ditto*, 1894; *Watson's ditto*, 1896; *Washington Post* History of Washington, 1904; *Twentieth Century Biographical Dictionary*, 1904; and some minor publications.

PHOTOGRAPHS OF MEMBERS.—So far, twenty "groups of eight" have been reproduced in halftone. These groups are made up according to the year of accession of the members to the Society. The completion of this part of the work is delayed by the failure to receive certain photographs that are necessary to make up the remaining groups. If those members who have thus far not responded to the request of the Committee will attend to the matter at an early date, the grouping will be greatly facilitated.

Neither the Committee nor the Society has any understanding with any photographer as to furnishing photographs of members.

The Committee would like very much to secure the loan of photographs of members who are deceased or absent from the city; these likenesses will be returned as soon as the halftones are made. Some members have already made such loans, and the Committee herewith extends its thanks for the courtesy.

THE PRESIDENT'S HOMES COMMISSION.

A circular has been issued, addressed to physicians, under date of June 20, stating that "the 'Committee on Social Betterment' of 'The President's Homes Commission' believes that an investigation into the prevalence of certain diseases and morbid habits will prove a very useful medico-sociological study and possibly suggest important preventive measures. For this purpose will you kindly co-operate with the Commission, which serves without pay, and furnish the desired information, for which full credit will be given you in our report to the President. It is respectfully suggested that the collection of your memoranda begin July 1, 1907, and end December 31, 1907, after which date kindly transmit the results of your observation to the undersigned." [DR. GEO. M. KOBER, 1600 T Street, N. W.]

Then follows a series of questions in regard to the prevalence of venereal diseases, the alcohol and drug habits and sexual hygiene. Any physician desiring a copy of the circular can obtain the same from Dr. Kober.

REPRINTS from the ANNALS containing an account of the dinner to Dr. J. Ford Thompson can be obtained from the printer, R. Beresford, 618 F Street, N. W., or from Dr. D. S. Lamb, at ten cents a copy.

REGISTRATION OF PHYSICIANS IN THE DISTRICT OF COLUMBIA.

Some observations made by one of the Examiners for registration of physicians in this District may be of interest. The examination is both written and oral, though the latter forms but a very small part of the whole. The written examination occupies three days, and is divided into eight subjects, two hours being allowed for each subject in which to answer the questions. Complaint has been made by some candidates that the two hours is not sufficient for the purpose, but this complaint can hardly be well founded, in view of the fact that in one examination twelve out of thirty-one candidates, or 40 per cent., made an average of over 90.

Many candidates, by reason of poor preliminary training or carelessness, or both, present poor papers, papers in which there is no methodical arrangement of statements, and the English is otherwise also bad. The question is not one of sufficient time but of sufficient preparation; the difference between knowing and not knowing; between stating correctly and properly or incorrectly, carelessly and otherwise improperly. The candidate who knows his subject reasonably well, and has been trained to method in his work, is not the one who complains of want of time to answer questions. Some papers are presented in which absolutely no attention is given to punctuation, little or none to capitalization, and the answers are crowded together, and are not properly arranged.

Something must be said also of penmanship. Papers are presented that it is almost impossible to read, or that can be read only with the greatest difficulty and waste of time. A common mistake is to use a relative so that it is uncertain to what it relates. Some omit to capitalize proper names; they write of "gram's" method; perhaps they know no better. A common mistake is to apply the personal pronoun to inanimate things: as "cancer is a new growth the cause of *whose* production is unknown."

Something must be said about spelling. In these days of reform in spelling, a legitimate reform by the way, a phonetical reform as it should be, one must be a little careful in his criticisms. Some liberty must be allowed, but at the same time there is practically a limit to be made. In these cases of different spelling

but of like pronunciation, it will hardly do as yet to make the spelling uniform. The candidate who writes that he uses *bullion* as a culture medium, can hardly be regarded as having made a correct statement, though, phonetically, nearly correct. His statement is not only incorrect but ridiculous. A *fowl* odor may be in the same category. When he writes of a fracture of the *ileum* or a rupture of the *ilium*, he again is both incorrect and ridiculous. So also when he says that the phrenic nerve *en*ervates the diaphragm. The bacillus *colli* sommunis is a thing unknown as yet, while the bacillus *coli* communis is a very familiar object. It makes some difference whether the candidate spells it pancreas or pangreas; the difference of a *c* or *g* makes a marked difference in meaning. Even the doubling or not of consonants is of importance in some cases; a thing may be *striped* with out being *stripped*. And so we might multiply words of like or near pronunciation but of very different and sometimes opposite meanings, these should be differently spelled. The *principal* thing to be observed is that there is a *principle* in the matter.

A common error is in the spelling of technical terms derived from the Latin or Greek, especially in the terminations of the cases, and formation of the singular and plural. The meaning, of course, absolutely depends on correctness of termination. Some candidates write of *a* media, *a* data, *a* memoranda, *an* epithelia; alveola is used for alveoli; spiculi for spicula. It would be better and safer for such candidates to use the plain English with the plural ending in *s*. Some candidates drop the final, silent *e* in many words; and this perhaps is in the right direction; while others add an *e* or other unnecessary letter, as in lense and throate, and double the consonants unnecessarily, as in innoculation, aggar-aggar, &c.

Some candidates use the expression "*you* find," as if speaking or writing to a class and not to an *individual;* although this use is not incorrect it is certainly not in good taste; better to say "we find." The indiscriminate use of the substantive and adjective forms of words, as *mucus* and *mucous*, is another thing to be criticised. Some candidates write of the *serious* coat of an organ; some of an *emersion* instead of an immersion lens. Such expressions are found as the "coats of the artery were dilated;" the "lumen was hard and inelastic."

The profession of Medicine is a *learned* profession, and a prac-

titioner of medicine should have attained a reasonable standard of learning ; a standard that includes not only the knowledge and skill to properly treat those who are sick or injured, but includes also the knowledge of the language and skill in its use that are requisite to properly state in writing or in print what the practitioner knows or can do.

Just how much *numerically* should be deducted from the mark of a candidate who is markedly deficient in this knowledge and skill in language, is a question that frequently presents itself to the examiner.

OLD AGE.

An interesting paper on old age by Dr. J. H Kellogg, appears in the August number of *Modern Medicine*, page 178. It is based largely on the "Essais Optimistes" of Metchnikoff, of the Pasteur Institute, Paris, who for many years has made a study of the subject of longevity, with some curious results.

For instance, it is found that in Greece there is one centenarian in 25,641 inhabitants, while in France there is only one in 219,-940. The largest proportion of old persons is found in the Balkans, where in a relatively small population there are over 5,000 centenarians. Many individual cases of longevity are given, ranging from 120 to 185 years. Metchnikoff has also studied the same subject in the lower animals and in plants.

Some one has said that a man does not die but kills himself, and Metchnikoff believes that the death of old age is due to a failure of the body to eliminate the poisons that are produced in the course of the activities of the body. The most important organs that eliminate poisons are the liver and kidneys, and when they fail to do their work degeneration and death follow. He goes further than this, and states that the degeneration is caused directly by wandering cells that he calls *microphages*, the work of which normally is to destroy waste particles, but when the vigor of the body is reduced by the accumulation of poisons, then the microphages destroy the living tissues.

He claims that in order to prolong life the accumulation of waste in the system must be prevented, and that the first factor in this prevention is to avoid introducing any poisons into the body, in the category of which he includes alcohol, and foods that favor

the development of intestinal bacteria, of which flesh meat is the most important. Flesh-eating animals are relatively shorter lived than graminivorous and herbivorous. He considers that raw milk, cheese and eggs, for the reason given, should be sparingly used.

TOXEMIA FROM UNDRAWN POULTRY.

The above is the title of an editorial in the *New York State Journal of Medicine* of April, 1907, p. 157. Dr. R. L. Crockett,* the city bacteriologist of Oneida, N. Y., made cultures from drawn and undrawn poultry, with the following results:

From 100 *undrawn* kept at a temperature of 40 degrees, which is the usual house refrigerator temperature, cultures made from the abdominal wall showed intestinal bacteria 4 days after killing, and in 4.5 days in the muscles of the breast and legs; at a temperature of 70 degrees the intestinal bacteria were found within 18 hours in the abdominal wall, and 27 hours in the muscles of breast and legs.

From *drawn* poultry, at 40 degrees, cultures made up to the 28th day, and at 70 degrees up to the 14th day, failed to show the presence of intestinal bacteria.

The colon bacillus was found in every case examined of the first series; the streptococcus pyogenes in 65 per cent., staphylococcus pyogenes aureus in 20 per cent., and proteus vulgaris in 6 per cent.

Accepting these results as correct, the conclusion is plain that poultry should be drawn before placing in cold storage or offering for sale.

THE THIRTY-THIRD ANNUAL MEETING of the Mississippi Valley Medical Association will be held at Columbus, Ohio, October 8, 9 and 10, 1907, under the presidency of Dr. H. Horace Grant, of Louisville, Ky. The orator in Medicine will be Dr. Geo. F. Butler, of Chicago, Ill., and the orator in Surgery Dr. Frank D. Smythe, of Memphis, Tenn.

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*Paper read by Dr. M. Cavana, of Oneida, before American Association of Railroad Surgeons, Oct. 17, 1906.

Sixth International Dermatological Congress.—This Congress will meet in New York City Sept. 9th to 14th, 1907. Programs will be sent and information in regard to accommodations, registration, &c., on application to Dr. John A. Fordyce, Secretary-General, 80 West Fortieth Street, New York City.

Dr. Frederick F. Russell, Captain and Assistant Surgeon, U. S. Army, is acting as Curator of the Army Medical Museum during the absence from sickness of Dr. James Carroll, Major and Surgeon, U. S. Army.

The American Public Health Association will hold its thirty-fifth annual meeting September 30th to October 4th, at Atlantic City, N. J.

Correction. In Dr. Wilson's article on goiter, see page 303, the words "14 successful cases" should read "several successful cases."

Medical Miscellany.

Review.—Diseases of the Rectum, by Brinkerhoff.—This is an exposition of cases of hemorrhoids treated by the injection method, of which the author has been for years the chief exponent. It has the flavor of being put forth as an advertisement of the author's methods and successes, and would not be worth reviewing were it not that it is an illustration of the fact that many methods of treatment classed as "irregular" have in them some germ of truth which we should do well to heed and which should not be summarily flouted.

The injection method of treating hemorrhoids now has a recognized place in rectal surgery and is used by all specialists in this line of work in cases which, for one reason or another, are not suitable for operative measures.—Edward A. Balloch.

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WASHINGTON MEDICAL ANNALS

CONSIDERATION OF THE OPERATIVE TREATMENT OF DEFLECTIONS OF THE SEPTUM NARIUM.*

By CHARLES W. RICHARDSON, M. D.,

Washington, D. C.

The septum narium is a thin plate of cartilage and bone covered with muco-perichondrium and muco-periosteum which separates the nose into two nasal chambers. This structure is composed of the quadrangular cartilage of the septum, the perpendicular plate of the ethmoid and the vomer. It should be placed in a vertical plane in the nose to be in an absolutely normal position. Through the action of various agents the septum becomes subject to alteration in its normal plane; when this change is so excessive as to obstruct one or both nasal cavities, or bring it into contact, more or less constant, with one or more of the turbinates, the condition becomes pathological. The changes in the septum may be such that there is a simple bending of the septum without any thickening; at other times the deflection is attended with increase in its lateral dimensions, which latter may assume the form of thickening at the point of greatest bending or the formation of a distinct ridge or spur. The etiological factors which produce deviation of the septum may be classified under four headings, viz: developmental, obstructive, traumatic and diseases of a general or local nature.

Developmental.—This factor no doubt plays quite an important role in the causation of deflection of the septum. The septal constituent parts not ossifying with equal degree of rapidity, and being in excess of the normal space allotted to them cause, naturally, a bending of the later ossifying bone or the least resisting constituent of the group making up the septum.

* Read before the Medical Society, October 2, 1907.

Obstructive.—Conditions causing obstruction to the air current through the nasal cavities impair the development of these chambers and the constituent bones that enter into their formation. At the same time there is frequently an increase in the arch of the hard palate, leaving, consequently, less vertical space in the nose within which the septum must form.

Traumatic.—Direct violence of great force is frequently sufficient to fracture the bones of the septum, causing displacement of them with resulting deflection, or by separating the quadrangular cartilage from its attachment to the vomer and ethmoid causes luxation of the latter, with resulting deflection of the structure. Mild blows, frequently repeated, received throughout childhood, cause occasionally displacement, but most frequently thickening along sutural borders.

Disease of a general or local nature.—It is stated that syphilis and rachitis are factors in developing deflection, but wherein they can be causative agents I have never been able to see. Local inflammatory disturbances producing adhesion in the young, and new growths are infrequent causative agents.

A deflected septum in itself is not a pathological condition. The deflection becomes pathological only when it causes impairment of the function of the nose, either through partial or complete arrest of the air current through one or both of the nasal cavities, or when, through pressure upon the turbinate bodies, intermittent or continuous, the cause interferes with the performance of the normal functions of these bodies; or when, through one or both of the above disturbing causes, a certain train of symptoms is produced which are usually designated as reflex. It is not always possible to come to a conclusion, immediately, wherein and how far a deflected septum is giving rise to symptoms. Ofttimes it is necessary to examine a case several times, at intervals, under different conditions, to come to a safe and sure opinion. Indeed, at times, when a septum has been operated upon in which you had somewhat of a struggle to come to the operative opinion, you will find well back beyond the deflection prominent ridges or spurs which projected into the turbinate and which were entirely hid from view by the deflected portion of the septum. At the present day, when operative intervention about the septum has become so common, it is well that one consider the case quite thoroughly as to the extent of the deflection, as to

its impairment of respiration, how far it influences pathological changes within the nasal cavity, and to what extent the reflex symptoms present in the individual case can be associated with the deflected septum.

In the early period of nasal surgery it was recognized that the deflected septum played an important rôle in the impairment of function and the causation of certain pathological changes, so that rhinologists early sought methods to overcome this condition. The early attempts at correction were vain, and more failures by far were the result of operative treatment than improvements—very few good results. Various forms of penetrating punches, as well as stellated cutting punches, were used at that time with solid metallic or ivory splints to retain the so-called straightened septum. Then came the operation of Roberts, the cutting of the septum and pinning the septum into its new position. We next find the varying types of cutting and crushing operations, which had for their purpose the destruction of the resiliency of the septum, thus restoring it to the vertical plane, where it was retained by splints in its new position until the attempt had proved a success or failure. The cases that resulted favorably through this method of operation were those that permitted the riding over of the fractured fragments, and the redundant septum, thereby reducing itself so that it could more nearly approach the normal type. Under this class would be included the Asch, Roe and other operations too numerous to mention. Later came special modifications of these operations, all being an improvement on the previous more or less blind crushing methods, and each in certain types of deflections being attended with most excellent results. Under such may be classified the Kyle, Gleason, Watson and others, following out the same idea. During the greater portion of this period there had been gradually developing a type of operation which had for its purpose the removal of the deflected portion of the septum, whether cartilaginous or osseous, or both, through a submucous method, leaving a straight, although partially flaccid, septum. Through the efforts of Killian, Myles, Freer and others, this method has been perfected in the past five years, and as perfected has been accepted by the greater portion of the rhinological world as the operation for the correction of misplaced septa. Those operators who had gained a greater portion of success in their operative cases through the employ-

ment of one or more of the previously designated operations were rather loath to accord fellowship to the new—to them untried—method of operating. The objections raised against the new operation were (*a*) the possibility of the lowering of the plane of the dorsum of the nose, (*b*) the great possibility of causing perforations through the new method of operating, (*c*) the question as to the advisability of replacing a normal osseo-cartilaginous septum with a semi-flaccid septum, (*d*) the recognized difficulty of the technique, and the time consumed in the operation. I was one of those who, having found a fair degree of success in operative treatment of the septum through methods tried and found fairly successful, felt rather uncertain of the advisability of relinquishing my previous method for the seemingly uncertain new method. Two years ago I concluded to determine the value of the two operative proceedings, through personal experience. My previous operative method had had for its purpose the removal of a small wedge of cartilage and bone from the septum near its attachment at the floor of the nose, the sawing through and fracturing the nasal spine, the separation of the quadrangular cartilage along a portion of its superior and whole anterior border near the dorsum and just back of the columnæ and the fracture of a portion of the anterior extremities of the ethmoid and vomer, when found necessary. Always after this method of procedure the septum would assume its normal place. A splint was worn continuously for a week. This operative procedure presents certain features that were original creations of mine. The fracture of the spine had been suggested and acted upon by Harrison Allen, who rightly considered it essential to the success of the operation. Allen's method of attacking the spine was by an incision made through the gingivo-labial border of the upper lip. I attack the spine through the floor of the nose by means of a saw, either sawing through it completely, or partially, and then fracturing it by the use of forceps. The continuous wearing of the retaining apparatus for a week or ten days was first suggested by me, after demonstrating the advisability of this method over the old procedure of frequent removal and reintroduction, in a paper read before the meeting of the American Laryngological, Rhinological and Otological Society, held in Pittsburg in 1898.

Nearly 80 per cent. of my results during '03, '04 and '05 were excellent. In many of my successful cases, it was practically im-

possible to tell that the septum had even been out of its normal place or that it had ever been operated upon. The cases that disappointed me as to the results caused me to wish for some operative procedure that would, with the execution of proper skill, give uniform, perfect results. As the literature seemed to bear testimony to uniform results as following out the submucous method, I determined to become skilled in its technique and prove its superiority, or inferiority, to my previously adopted method. I will briefly describe the submucous resection for the benefit of those not versed in its technique. The operation is most frequently done under cocaine anesthesia, with the additional use of a solution of suprarenal glands or adrenalin to render the mucous membrane ischaemic. These agents having been instilled in the nasal chambers, an incision is made through the mucous membrane and perichondrium of the septum into that nasal cavity into which the bending of the septum presents itself. Some operators make it a rule to operate on the convex side, others always in the left nasal cavity, whether it presents the convexity or concavity of the deflection. It is more convenient to operate in the left nasal cavity, as one must be expert in the use of the left hand to operate in the right cavity. The primary incision also varies. Many, following the Killian school, make a vertical incision from the dorsum about a half centimeter posterior to the columna, extending to, if not including, the floor of the nose ; others make the incision slightly curvilinear but follow the same outline. Others, following the Freer school, make the incision in the form of an inverted capital L over the point of greatest projection. The muco-perichondrium is carefully raised along the posterior line of the incision with care and delicacy until a good separation is made between the muco-perichondrium and cartilage, with a half-sharp elevator, then fairly rapid work is done in further separation, using care over angles, about sutural borders and where adhesions are met, until the whole muco-perichondrium and muco-periosteum are thoroughly stripped from the cartilage and bone. The second step is an incision through the cartilage made through the original wound and parallel to it without injuring the muco-perichondrium of the opposite side. When this is completed, with the same care and delicacy, the soft structures are carefully separated from the cartilage and bone. The third step is the removal of the deflected

cartilage and bone between the two flaps which have been formed. The final procedure is the bringing of the flaps together and holding them in position by a packing of gauze. The gauze is usually removed in twenty-four hours, when union is found to be complete. The foregoing is practically the usual operative procedure—I have varied this slightly in my technique.

From observations which I have made in the clinics and private work of some of the most dextrous and rapid workers in this operative technique, and from my own experience, I early became convinced that cocaine anesthesia was not sufficient to relieve the patient of pain attendant upon its performance; also, that a suffering patient, with loss of fortitude, did not aid in the successful issue of such a delicate operation. In my early work I operated under cocaine anesthesia. In the early stage of the operation, under the use of cocaine, I found the anesthesia all that could be desired, but, as the operation was often prolonged, and the most trying part of the procedure came at the last, I found that most of my patients suffered quite a little pain and shock, and several of them became so demoralized as to render the completing of the operation extremely difficult. I therefore turned to general anesthesia, at first operating only upon those under this method whom I had cause to fear would not last out under local anesthesia. I found this method so satisfactory that during the past year I have done all my septum operations under general anesthesia. By this method the patient is entirely free from the possibility of pain, and the operator is saved the disquietude resulting from the anxiety and suffering of his patient. The bleeding under general anesthesia is a little greater than under local anesthesia, but I have never found it sufficient to delay or annoy me during the progress of the operation. I have also found it wise to carefully study the relation between the convex surface of the deflection and the alae of the nose, so that the incision will be made sufficiently well forward to avoid making a failure of the operation, on account of the alae coming in contact with that portion of the cartilage that is left. I have also found the collodion dressing applied along the edge of the wound after the flaps have been brought in apposition to be of value.

My results by this operation have been uniformly good for the relief of stenosis, contact with the turbinates, or the relief of reflex symptoms. In none of my cases has there been any sink-

ing of the dorsum of the nose. Where there is sufficient bony structure left above and a fair bridge of cartilage anterior to the seat of operation, I doubt if this occurrence can take place. I doubt very much if there is ever a reproduction of cartilage or bone in the area from whence it is taken. The flaccid septum becomes tense and later gives a certain firmness of sensation. In several of my cases where a large portion of the hard septum was removed my patients have been annoyed for a month or more by the flapping of the flaccid septum. The symptom of which they complained was the frequent alternate occlusion of the nasal cavities, due to the flaccid septum coming in contact with one, then the other, outer wall of the nose. I, unfortunately, have had perforations. Most of my perforations were made during my early operative days, and no doubt were largely the result of want of knowledge of the adequate skill to obviate and overcome the various pitfalls which in this operation present themselves from the very start to the finish of the operation. I know of no operation in which an operator has to be so "keyed" up and so carefully has to scrutinize every move in the technique as is required of a surgeon in this operation. Twice I have had two fairly large perforations to develop from pin-point incisions into the opposite muco-perichondrium at the point opposite the primary incision. In both of these cases I was conscious of the wound, and before introducing the packing, I closely scrutinized the mucous membrane, hardly being able to note the point of injury—nevertheless, the perforation resulted. In all, I have had 5 per cent. of perforations. In my last series of thirty cases I have had only one perforation, and this was one of the two described above. Twice when operating I have recognized the fact, from a misfortune, that a perforation would in all probability result if I continued the operation by the submucous method; I therefore discontinued the procedure and resorted to my former method. Perforations resulting after this procedure heal kindly, and are not usually attended by crust formations, therefore, give no annoyance to patients; in fact, patients are never conscious of their existence unless informed of it. If we could depend upon our confrères to be considerate in not notifying the patients of the existence of perforation in their noses, they would be of no consequence, except the personal chagrin they cause the operator. During the past two years I have, in all, operated upon one hun-

dred and ten cases of deflected septum by this method. Twenty-two of the operations were done under local anesthesia, with three perforations; eighty-eight were done under general anesthesia, with five perforations. During this same period I performed twenty operations by the method formerly employed by me, with only one perforation. The results gained through the two methods of operative procedure have been practically the same, except that in the submucous operation the septa presented cosmetically a more perfect appearance.

(1) The old method gives, after the operation, a septum maintaining its anatomical integrity. The submucous operation gives a flaccid septum, minus certain elements considered formerly essential to its anatomical integrity.

(2) The operation by the old method requires about five minutes in its consummation—the submucous requires from one-half to one hour in actual operating time.

(3) The old method requires the wearing of a splint for a week or ten days. The packing in the submucous operation is removed in twenty-four hours.

(4) In the old method there is considerable pain and discomfort until the splint is removed—there is no after pain in the submucous.

(5) In the old method of operating the patient is confined to bed for one week and is uncomfortable and feverish until the splint is removed. The submucous patient is out of bed at the end of twenty-four hours, and at the end of forty-eight hours is practically well.

(6) The old method is rarely attended with perforation—I have had only two in my whole experience. Theoretically, the submucous method should be attended with like results—practically, perforations do occur. I feel as though I am strongly becoming an advocate for the submucous operation, because it gives less discomfort to the patient, it taxes the skill of the operator and, when satisfactorily done, gives most delightful results.

Dr. McKimmie said that after the interesting and exhaustive paper there was little left to be said. The old method of operation may still be used in many cases with success, but the submucous operation is extremely satisfactory, especially with regard to the immediate post-operative comfort of the patient. The technic, as

outlined by Dr. Richardson, is very difficult, but from Dr. McKimmie's own somewhat limited experience he would say that the use of a complete set of well-adapted instruments adds much to the ease of operating. Freer, Haight and Killian have each devised instruments for the operation, and from these a judicious selection should be made to suit individual preference.

There must, of course, always be some chagrin at a resulting perforation, and unceasing care must be exercised to avoid this accident ; but with the submucous operation, the two muco-perichondria are left in close apposition, and the disagreeable crusting which follows perforation after the old technic is, for the most part, avoided.

Dr. Richardson had not given himself enough credit for his original advocacy of the retention of nasal splints until their final removal ; that mode of treatment had added much comfort to the after-care of these patients.

The time allotted for the reading of the paper had, no doubt, prevented Dr. Richardson from speaking at length upon the swiveling of the anterior segment of cartilage ; this condition may not be noticed at times because of the habitual use of the speculum with the blades held laterally ; if the blades are introduced and separated in the vertical direction, contact between the alae and the swiveling portion of the septum may be observed. He expressed his appreciation of the paper and the interest with which he had worked with Dr. Richardson in some of his cases.

Dr. R. S. Lamb congratulated the essayist upon the excellent results obtained by the technic described and also upon the very complete résumé of the subject.

Dr. Lemon said that he could add nothing to the discussion of the immediate subject, but he wished to speak as a grateful patient in praise of the wonderfully helpful results conferred upon him by Dr. Richardson by the use of the old operation.

Dr. O. Wilkinson asked if Dr. Richardson had noticed the whistling noise produced by perforations following the old operation.

Dr. Bermann had listened to the paper with great interest, but he felt that operative treatment is not always called for. Some years ago he had spoken before the Society in favor of treating deflections and spurs by electrolysis ; he still uses that method and finds that perfect success may be achieved by it. Of course, a cure can be obtained only after a number of treatments, but the length of time required is counterbalanced by the escape from the knife. He spoke in detail of several cases in which he had secured perfect absorption of spurs and ridges. He has found that the use of a current of high amperage and low tension is best.

Dr. Bennett asked what importance Dr. Richardson attaches to spurs situated behind the deflection and which do not of themselves cause obstruction. He has had patients whose obstructive

symptoms were relieved by separating the ala from the deflection, notwithstanding the existence of spurs further back; is it necessary to include such projections in the excised septum when relief may be obtained by the anterior operation?

Dr. D. Olin Leech wished to speak of the relief given him by Dr. Richardson, who had straightened a deflected septum for him in the early days of Dr. Richardson's professional career.

Dr. Richardson said that in operating, the incision should be made anterior to the deflection and the muco-perichondrial flap should be dissected up over the entire deflection and carried back far enough to include spurs behind, removing the bone and cartilage wherever deformed. The operation is defective unless all projections have been removed.

With regard to whistling noises, they depend upon the size and location of perforations; those from 2 mm. to 4 mm. in diameter and anteriorly situated, whistle loudest. Large ones produce no whistling at all.

The submucous operation is one that taxes the operator's skill to the utmost; the preliminary incision must be clean and perfect; every step must be watched, as the dissection must be carried over every inequality and into every depression, with painstaking separation from sutural borders; the incision must be carried through the bony and cartilaginous septum to, and without injuring, the opposite lining, and the dissection on that side accomplished with equal precision.

CASES OF UNUSUAL FRACTURES OF BONE.*

By W. P. CARR, M. D.,

Washington, D. C.

Case I.—Fracture of Anatomical Neck of Humerus.—This is a very rare fracture. Its existence has even been denied by some. I have seen two cases and operated on both. The interesting feature of these cases is that after several weeks, vicious union occurs, they then closely resemble subcoracoid dislocation. The union is principally cartilaginous or fibrous and seems never to ossify. This case was seen at the Emergency Hospital by Dr. Jackson and myself several months after the fracture occurred. We both mistook it for a subcoracoid dislocation. Tried reduction; finally cut down on it, and then, finding the head of the humerus apparently a large, deformed irregular mass of bone and

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cartilage, we thought it was a tumor, probably an osteosarcoma, and removed it. It was only after boiling and removing the fibrous tissue and cartilage that the true condition was discovered.

CASE II.—Colored newsboy about 17 years old. Came to the Emergency Hospital complaining of great pain and lameness in left hip following injury 8 months before. Had been confined to bed several months, and was still unable to walk on account of severe pain. X-ray picture showed apparently a bony-cartilaginous tumor involving the neck of the femur and acetabulum.

With the assistance of Dr. Shands I operated upon him and removed the specimen before you. The neck of the femur is much thickened, shortened and rough, as is the head of the bone. From the great trochanter a long osteophyte projects upward two and three-quarters inches. This sharp-edged osteophyte, like a knife-blade, must have cut the soft tissues at each movement of the thigh backward or forward.

In this case, also, the head and neck of the bone were enveloped in a fibro-cartilaginous mass giving the appearance of an osteosarcoma. Suspicion of a malignant growth caused us to remove an inch more of the femur than would otherwise have been necessary.

The boy made a good recovery and has good use of his leg. Except for the shortening there is no disability. The joint is freely movable. He carries crutches, he says, because they help him sell papers. I have seen him tuck both crutches under one arm and run across the street as well as anyone could.

In this case there was evidently an impacted fracture of the neck of the femur and, owing to lack of treatment, movement and irritation of the parts caused excessive callus formation and the development of the osteophyte.

Dr. Hickling said that if skiagraphs of the fracture of the humerus had been taken no difficulty would have been met with in making the diagnosis He had recently seen two cases of fracture of the anatomical neck of the humerus; in one there was little displacement and the diagnosis was obscure; in the other there was much deformity. The diagnosis was confirmed by a skiagraph in each case.

Dr. Carr said that the diagnosis should be made even without a skiagraph, if the patient is examined soon after injury. Both cases reported by him had come to the hospital months after injury, without prior treatment of any kind. In the case of frac-

ture of the anatomical neck of the humerus, although resection was done under the impression that the condition was malignant, resection would have been indicated because of the lack of blood supply of the upper fragment.

CASES OF UNUSUAL URINARY CALCULI.*

By W. P. CARR, M. D.,

Washington, D. C.

Case I.—A unique set of stones taken from the urethra of an old man with typhoid fever. These seven stones lay in the pendulous urethra, touching each other, with smooth articular surfaces like the vertebrae of a fish. At each end of the row of stones was a tight stricture, and the end stones are conical to conform to the narrowing of the urethra at those points. I was called in several years ago to see this man by Drs. Watkins and Middleton. He was suffering from a severe attack of typhoid fever, and was unable to pass urine. The stones were easily removed by external urethrotomy, two small incisions being made under local anesthesia. The strictures were then dilated, and he was relieved, but died a week later from his fever.

Case II.—A *cystogen* stone removed from the kidney. This is a rare variety of stone—the only one I have ever seen. It presents a very pretty appearance—the cystogen crystals sparkling like small diamonds. It must have been a very irritating sort of foreign body on account of the numerous sharp points.

This stone was successfully removed, about two years ago, at the George Washington University Hospital. I did not know what variety of stone I had until informed by Dr. Frank Hagner, who had previously seen one or more cystogen stones.

Dr. Lochboehler spoke of an unusual experience with a case in which labor pains masked the pains of renal colic. During the progress of delivery he had been unable to account for the very severe lumbar pain, until during a pain a large ragged stone was expelled from the urethra. Version had been found necessary in this case, and the administration of morphine and chloroform further obscured the condition.

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THE INFLUENCE OF THE GONOCOCCUS IN THE CAUSATION OF STERILITY.*

By JOSEPH TABER JOHNSON, A. M., M. D., Ph. D.,

Washington, D. C.

While there are many easily diagnosed and universally recognized causes of sterility, the main object of this paper is to discuss the influence of the gonococcus on the male and female generative organs, as one of the chief causes of this condition, which is always deplorable and frequently incurable.

That this subject is attracting attention is perfectly evident from the most casual investigation of the medical, religious and secular literature of the day. Sociologists and those interested in the preservation and perpetuation of American families in our country have become alarmed over the constantly diminishing size of the American family. Legislatures in some of our States have appointed expert committees to investigate and report. Statisticians, both State and national, acknowledge that "race suicide," as the President of the United States has so aptly called it, is not only alarmingly frequent, but is on the increase. Dr. Engelmann, of Boston, stated in a public address in this city five years ago, that the birth rate in America was lower than that of any European country except France. He also stated that the birth rate of the American born population was much lower than that of France, and that the fecundity of American women was less than that of any other country.

Dr. Ward, of New York, has insisted within the year that the number of children per marriage has decreased from 4.5 in the eighteenth century to 2.5 at the present time, and that while voluntary race suicide is alarmingly prevalent there is still the great multitude who, through no wish of their own, are childless, and who are constantly spending their time and money in seeking relief.

It is the involuntary sterility of this vast multitude that this brief paper will discuss tonight. While it is not claimed that sterility is chiefly caused by the germ under discussion, the desire is expressed that its direful influence should be intelligently, scientifically and professionally known, and the respon-

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sibility in the final production of this lamentable condition placed where it honestly belongs.

One may safely state that gonorrhea is the most frequent of all the adult diseases. The lowest estimate which we meet in recent literature is that at least 75 per cent. of the male inhabitants of our cities, between the ages of 18 and 28, have had, or now have, this disease. Its frequency is placed by many at a much higher rate, varying anywhere from 75 to 95 per cent. It is probable that the latter figure is more nearly correct than the former.

Genito-urinary specialists generally agree that the curability of this infection cannot be assured short of six months treatment, and observation in the milder cases. In the severer degrees of this infection involving the urethra and seminal vesicles it is doubtful if a radical and permanent cure can ever be honestly promised which will make married women perfectly secure from subsequent gonococcal infection.

The statements of Noegerrath in regard to the latent powers of the germ of Neisser have been generally accepted by the profession, and it is now held to be quite possible for a man, who honestly believes himself cured of an attack which occurred several years before his marriage, and from which he had for a long time been free from any gross symptoms, to infect his wife.

Wirtheim has demonstrated that in cases even where the husband had been assured by his physician that he was cured, it was still quite possible for the excesses and excitements of the newly married state to revive into virulent activity the latent gonococcus which had been hibernating for years in the deep recesses of his generative tract, and which could cause a characteristic specific infection in the newly married woman.

The pathetic part of this unexpected and heretofore misunderstood condition is, that the innocent victim of the husband's early unchastity is, frequently, accused by him of being the cause of his reinfection. Believing himself free of the disease, he, naturally, thinks his wife has lapsed from virtue, acquired gonorrhea from some one else, and brought it home to him, when in reality just the opposite condition actually exists.

It was until recently believed that "in nine out of ten cases of childless marriages the fault was that of the wife." It is now known that in a much larger proportion of cases than was formerly suspected the husband himself is sterile, and that quite frequently this sterility is caused by the effects of gonorrheal infection.

Dr. Hagner, in a recent paper on sterility in the male, read to this Society, said that "as a net result of many investigations it may be stated, in general, that in cases of unfruitful marriages the husband is the sterile member of the family in about one case in six. Dr. Hagner quoted the statistics of Kehrer on childless marriages, who believes that their cause if sought for would appear much oftener on the side of the man. He found that, in 96 investigated cases of sterility in man, 63 had a history of gonorrhea, with infection of the epididymis and prostate. Noegerrath found 8 unfruitful marriages, in a series of 14 cases, to be the fault of the male, and Gross, in 192 cases, found the male deficient in 18 per cent. Brothers places the responsibility with the man in 20 per cent. Reis says it is 30 per cent. Kehrer, in 31.5 per cent. Lier and Asher found that, out of 424 childless marriages, 169 or 40 per cent. were due to the sterility of the husband. Vedder, of Christiania, in 310 cases, by including all cases of sterility in women due to gonorrhea acquired from their husbands, found the man at fault to the extent of 70 per cent. The principal cause of sterility in men is stated to be bilateral gonorrheal epididymitis. Bengler, in 1898, found that among soldiers in the German army, who had been married three or more years, 10.5 per cent. who had suffered from gonorrhea *without* epididymitis, were childless, and 41.7 per cent. of those having bilateral epididymitis, were childless, and adds that it will be seen from all statistics that epididymitis is by far the most common cause of sterility in the male. Men are, therefore, from a consideration of the above statistics, responsible for from 18 to 20 per cent. of the sterility of the world, and in the language of Hagner, the "principal cause of sterility in men is bilateral gonorrheal epididymitis." Still greater responsibility might justly be placed upon the shoulders of those husbands who, through ignorance or thoughtlessness or unbelief, have infected their innocent wives, and thus brought about conditions which have resulted in their unwilling or enforced sterility. Gonococcal infection, Morrow tells us, is a more potent factor in the production of involuntary race suicide than syphilis, by the frequent sterility induced in both sexes, but much more frequently in women, on account of the ascending destructive and incurable infection of the tubes and ovaries.

Gonorrhea is the chief cause of the sterility of the prostitute class.

Gonorrheal salpingitis, whether it results in pyosalpinx or tubo-ovarian abscesses or not, usually destroys the ciliated epithelium of the tube, or so cripples the ovary that subsequent conception and normal gestation are well nigh impossible.

Gynecologists do not profess their ability to restore a fallopian tube which has been infected by the gonococcus to its normal condition. Sterility, or some more positive and destructive condition, is therefore the very common legacy bequeathed to the female victim of this disease.

A specific endometritis must always be the cause of a gonorrheal salpingitis.

The frequency of gonococcic infection in married women has been brought very prominently to the attention of the profession by Dr. Cleveland in his presidential address to the American Gynecological Society in May last, and the report of the "Committee of seven" on the prophylaxis of venereal disease in New York City, the latter of which indicates "that nearly 30 per cent. of all venereal infections occurring in women, in private practice in that city, are communicated to them by their husbands." Noeggerath stated, in 1876, that of every thousand married men eight hundred have had gonorrhea, from which a great majority of their wives have been infected. Another writer of large experience thinks that fully 70 per cent. of all women who came to his dispensary and hospital services for treatment were respectable married women who had been infected with gonorrhea by their husbands. Janet in his "Social Defense Against the Venereal Peril," in speaking of its frequency, says, "if we compare from a social point of view the importance of gonorrhea with that of syphilis, gonorrhea is to syphilis as 100 to 1, not only from the standpoint of the number of persons attacked, but also from the standpoint of the gravity of the lesions and their perpetuity * * * which today gives to the surgeons three-quarters of their work and conducts finally both men and women to sterility."

Noeggerath has expressed his belief that 50 per cent. of female sterility is caused by gonorrhea; Neisser places the percentage from this infection at 40 per cent.; while Gruenwald, Kammera and Crolax report 53 per cent., 83 per cent. and 40 per cent. of endometritis, mesometritis and peritonitis, of gonorrheal origin, as causes of sterility in the female.

The results of gonorrheal infection of the female pelvic organs are inseparably connected with the discussion of any and all phases of this question, and it is practically impossible for one who has written much on this subject to avoid repetition or to state old points in new or different language.

The phase of the gonococcus infection question which especially interests us at the present hour is its power to cause sterility which, in addition to its inhibiting effect upon the normal function of the female generative organs, is shown in the great number of unsexing surgical operations which are required to save the lives and restore the health of a very large number of infected women. The oft repeated statement is familiar to you all, that at least one-half of the abdominal operations of the world are necessitated on account of gonorrheal infection. While this statement is very startling, the sad part of it is that it falls far short of the actual facts, as reported by a large number of abdominal surgeons. Mann, of Buffalo, and many other gynecologists hold that, as gonorrheal endometritis is nearly always the cause of pus tubes, for the complete cure of the patient the practically incurable gonorrheal uterus must also be removed. It goes without saying that all these removals of the gonorrheal uterus *or* its appendages are the indirect cause of much acquired and incurable sterility—while the gonococcus is the primary and direct cause of all this class of mutilating and unsexing surgery, as it is sometimes called.

The sterilizing influence of this specific infection is seen again in the production of what has come to be known as "one child sterility." It is quite possible for a woman who has gonorrhea in the anterior portion of her birth canal to conceive and to give birth to a child, though it has a very dangerous gauntlet to run, and also to escape ophthalmic infection, which the statisticians tell us is the cause of about 30 per cent. of the blindness in this country. In a previous paper upon the effects of gonorrhea on the female generative organs it was stated that we had abundant testimony that specific infection frequently ascends to the pelvic organs after parturition, when this infection only existed below the internal os previous to labor.

The way seems to have been opened by the parturient act, through slight traumatisms in the endometrium for the lodgment, subsequent development, and multiplication of these germs, and their further ascent to the tubes and ovaries. Morrow declares

that "after accouchement the tissues of the genital organs are in a peculiar state of inhibition and infiltration, which offer to the gonococcus a favorable soil for its proliferation, and that the aptitude of a gonorrheic woman for conception is often extinguished by the first pregnancy, the one child representing the sum total of her reproductive energy."

The pernicious influence of the gonococcus is again shown as a sterilizer, in the causation of many more abortions than have heretofore been attributed to it.

Sanger contends that "as many abortions are caused by gonorrhea as by syphilis." Noeggerath states that "of 53 women known by him to be suffering from the effects of gonorrhea 19 aborted."

Frughinsholz found that in 101 pregnancies occurring in gonorrheic women, 23 aborted, while Williams insists that 73 per cent. of all abortions are due to endometritis, which is without doubt chiefly caused by gonorrheal infection, when not due to puerperal sepsis.

While many authorities might be quoted in favor of this proposition it is difficult to prove its direct causative effect, but the belief exists in the minds of modern writers on this subject that there can be no doubt that gonorrhea is very much more frequently than was formerly taught, the cause of abortion.

Sterility is the rule after a gonorrheal abortion or puerperium. The cause of extra-uterine pregnancy has never been definitely formulated and clearly stated in the text books on obstetrics or gynecology, but it is claimed by recent writers on social diseases and abdominal surgery that gonorrheal salpingitis plays an important part in the etiology of this condition.

Modifications in the epithelial lining of the tubes occur in mildly latent cases which may arrest the descent of the ovum to its natural bed in the uterus, and thus become directly responsible for its tubal development. To the extent that it is the cause of the death of the foetus, of mutilating operations and of fatal results to the mother, just to that extent it becomes another factor in the causation of sterility.

M. Paul Petit sums up the argument in this wise: "If this nuptial microbe, apparently benign, is sufficiently attenuated to not produce peritonitis—to not shut the tube at either of its ends (closure fatal for the race, but salutary for the woman), if, never-

theless, it happens that its delicate cells have lost their vibratile cilia, charged to secure the advance of the fecundated egg, this is arrested in the channel, through which it cannot pass, and notwithstanding the heroic efforts of nature to produce a compensatory hypertrophy, the drama still proceeds; in the place of becoming enfeebled, the virulence of the microbe becomes cataclysmic, extra-uterine pregnancy, much more common than is usually supposed, is constituted, the infant dreamed of, still in its embryonic state, has become for its mother a malignant tumor, and if it does not kill her suddenly by internal hemorrhage, when in apparent perfect health, which is fortunately quite rare, too often it offers her to the reparatory knife of the surgeon, and in the more fortunate cases immobilizes her for many months on a bed of suffering."

We have the authority of Jacobi and Currier for the statement that the vulvo-vaginitis of little girls, which is generally of gonorrheal origin, has the effect to retard and frequently to prevent altogether the normal development of the uterus and its appendages. Women with undeveloped or infantile uteri or ovaries, are not only great sufferers from amenorrhea and dysmenorrhea, but are at the same time unable to conceive, or if they do, to produce a live child. This condition amounts practically to sterility, and its first cause is gonorrheal infection during their infancy or childhood. Recent text books on pediatrics refer to the vulvo-vaginitis of little girls as the most frequent and troublesome of institutional diseases, and that in the great majority of cases it is caused by gonorrheal infection.

It is not, of course, suggested that their infection resulted from any sexual relation with the opposite sex, but was communicated from one to another in a great variety of ways.

Caille gives an example in his treatise of the spread of this infection in a public institution in New York harboring 850 children; in 130 cases a so-called leucorrhea developed, in two months, which proved, on investigation, to be gonorrheal in nature. Much more similar evidence could be produced if there was time to read it.

In addition to the above charges in the indictment against the "nuptial microbe," as M. Paul Petit calls it, we have the large number of indeterminable cases, where no surgical operations are performed, and no organs necessary to procreation removed,

and yet the women are living lives of chronic invalidism which too frequently means lives of chronic gonococcic infection, the ultimate effect of which is to inhibit any further conception.

The title of this paper suggests nothing in regard to prophylaxis or treatment. The subject is too large and uncertain for a very brief discussion. There are so many sides to it and so little agreement as to what is safest and best to recommend, that little has been accomplished. The question would open up the relations of the State and the attitude of society toward attempting somehow and in some way to control or limit or abolish the social evil.

The most natural suggestions for the writer of this paper to make would be the inauguration of a campaign of education which would take off the shoulders of the profession the burden of responsibility they are now compelled to bear, of allowing the constant excuse of ignorance to be longer pleaded by the guilty as well as the innocent victims of venereal infection.

We should not give our sanction to the marriage of any one known to have been recently infected until the use of modern methods of diagnosis has proved the absence of specific germs. And medical men should explain to the young men they attend or come in contact with, the real dangers of venereal infection and the necessity of a thorough cure. Hospitals should treat these cases to a cure. The safety of the State and society requires the protection of the ignorant and innocent from specific infection.

Dr. Hickling said that the question is one of great importance, and he is glad that it is receiving so much attention. It is of such moment that the Committee of Public Health of the Washington Board of Trade had decided to treat the subject in a special report, in hope of helping toward betterment of the conditions. Education will do much good, although there are some difficulties which must be met. The profession, parents and the State should all join in the educational movement. Legislative control is a very delicate problem, but some States are seriously considering it.

Dr. Hagner had enjoyed the paper. He does not, however, think that the statistics of the incidence of gonorrhea in the male should be so high; in his opinion 40 per cent. would be nearer correct. There is no question that many men marry while yet uncured, and often with the physician's consent; the popular notion prevails that a cure has been effected when the discharge has ceased. All the adjacent organs should be examined before marriage should be allowed. He believes that too much blame

is laid upon the gonococcus for the causation of pelvic disease in the female; there are many other chances of infection. One thing has impressed him, in view of the outcry against gonorrhea by gynecologists: he knows of very few men referred to the genito-urinary surgeons by gynecologists.

Dr. S. S. Adams agreed with Dr. Hagner in refusing to believe that 70 per cent. of men have had gonorrhea. How should boys be educated in these matters? When, how and by whom should instruction be given? He had been asked to give lectures to a class of boys from 10 to 16 years of age on "The relation of the sexes and the diseases incident thereto." He had refused to deliver the lectures and had told the master that if a boy of his (Adams) had received any such lectures in the school he would promptly have removed him from the school. In his opinion the parents are the proper persons to impart this knowledge, but at what age? It is a most difficult question to decide, and may be deferred too long, as, perhaps, we all may remember that we received our own instruction from vicious companions. He condemned the circulation of pamphlets on the subject, believing that more harm than good may come from them. No one would do more than himself to protect the boys, but he believes the community must first gain control of the semi-respectable women who entice the boys.

Dr. E. L. Morgan said we still live under the reign of the theological system; and theologians resist the wide dissemination of sexual knowledge. We recognize the need of some action, and we realize that nothing can be accomplished by the do-nothing system; therefore morals should be taught in the public schools and at a certain age. Perfect results can be secured by no one system, and the best existing should be adopted for general purposes.

Dr. Carr endorsed Dr. Adams' position that the only proper person to instruct children is the parent. He thinks it would be an outrage to teach such matters in public schools. The profession can best perform its duty by educating parents and by informing them as to what should be taught the children. He agreed also that pamphlets can do no good. The time for sexual instruction must be fixed by the character of the individual child; environment, neighbors, and personal qualities all enter into the question. As to the proposition to corral semi-respectable prostitutes, he deemed it impracticable. His own opinion is that the percentage of incidence of gonorrhea in men should be about 90 to 95. He commended Dr. Hagner's suggestion to require complete cure of the male before allowing marriage.

Dr. Reyburn thought the question a very grave and important one. So many innocent women suffer that the evil is one of the most dreadful he knows of. He gave a pathetic instance occurring in his own practice. It is a serious and grave matter,

and largely due to popular ignorance of the possible evils resulting from gonorrhea. Education must be undertaken by the parents and physicians at the proper age. With young men about to be married, the doctor might take the liberty of giving advice and caution as to the dangers of a lingering gonorrheal infection. He believes the statistics of incidence of gonorrhea in the male are too high.

Dr. D. S. Lamb said that he had reason to believe that there are a few publications which may with advantage and safety be given to young men. He has so given them to a number of youths, who reported that they had been much helped and wisely instructed by these particular books.

Dr. Hickling had purposely refrained from offering any suggestions as to the education of children in sexual facts, hoping to be instructed by the discussion. He himself had upon request lectured in a boy's school upon the evils of masturbation and had been astonished by the good effects produced. The education of children belongs to parents, with the help of physicians. The age for such education cannot be fixed, it must be relative. As soon as it is found that incorrect knowledge has been gained from companions, the parent and physician must step in and tell the truth. Withholding the truth is the reproach of parents and doctors.

Dr. Taber Johnson agreed with Dr. Adams that instruction should come from parents and physicians. Pamphlets have often done harm. As to the percentage of incidence of gonorrhea in men, he was forced to depend upon the statistics as published. Dr. Hagner was incorrect in denying the high rate of prevalence of gonococcic infection in women. Dr. Johnson believes that the indictment against the gonococcus is not severe enough. He condemned the public lecture upon sexual problems, and doubts the effectiveness of any possible legislation.

CASE OF AMEBIC DYSENTERY WITH ABSCESSES OF THE LIVER.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

I report this case through the courtesy of Dr. Arthur, Surgeon, U. S. Army, of the Washington Barracks Hospital.

The specimens consist of two portions of intestine and one of the liver. The intestine shows ulceration which is superficial in the ileum, sloughing in the caecum and descending colon. The

*Reported to the Medical Society, October 23, 1907.

entire large intestine showed ulcers. The liver was studded with abscesses. The ameba coli was found abundantly in the abscesses, and during life in the stools.

The case is that of a soldier who died at Washington Barracks Hospital, this city, and was under the care of the surgeon in charge, Major Wm. H. Arthur, and Capt. W. D. Webb, U. S. Army. The man, age 27, had had good health, except measles and mumps, until 1903, when he went to the Philippines; was there two years; while there had malaria and diarrhoea. After returning to this country he was taken sick in October, 1905, and was in hospital 2½ months; was somewhat yellow; lost 30 pounds weight. Had pain in right shoulder; bowels were regular.

In February, 1906, was again in hospital for the same complaint; and again in the following November; lost 28 pounds. Again in April, 1907, and again in July, remaining there until his death, September 18th. His symptoms, in brief, were a dull, aching, sometimes sharp pain in the region of the liver and small of the back; no swelling; he became slightly yellow; appetite poor; bowels regular but was unable to digest meat or fat; had slight pain in right shoulder at times; tongue heavily coated; occasional night sweats; face anxious; deep breathing was painful; there was a tender spot at the right tenth rib in the posterior axillary line; some rigidity of the rectus muscle at its upper part; a distinct and tender mass could be felt in the region of the gallbladder; the hepatic area seemed to be normal in extent; pulse frequent and small.

On the 8th of August Drs. Arthur and Webb made an exploratory operation, and found adhesions of the liver and gallbladder but nothing to operate on, and therefore closed the incisions. From this time he had daily a low fever with evening exacerbations. On the 14th the lower part of the chest, posteriorly, was punctured with a needle and dark pus was found; the tenth rib was resected at once in the posterior axillary line and an abscess was found involving the liver just under the diaphragm; this was drained; the chest was also opened and the lung found collapsed. A drainage tube was inserted in each opening. The fever continued; for awhile there was some consolidation in the left lung, but this cleared up. August 20th it was noted for the first time that the bowels were loose, and this condition persisted till death. Drainage from the wounds was usually free. The

appetite varied, sometimes good, at others poor. In fact his general condition also varied, sometimes encouraging, then again discouraging. On the 10th of September tenesmus was particularly noted. On the 18th he died.

While in the hospital of the Washington Barracks his temperature ranged from normal up to 103.4; was, however, almost constantly above normal until the last few days of his life, when it fell below normal. His stools averaged three a day during August, and seven daily in September.

The necroscopy was made by Dr. J. B. Huggins, Asst. Surg., U. S. A. The body was emaciated; skin muddy looking. Except for adhesions to the chest wall and diaphragm, the left lung was normal. The right was collapsed, weighed only 14 ounces, was firm and fibrous looking, and was firmly adherent to the chest wall and diaphragm. Pus and fibrin in the right pleura. The heart was small and adherent anteriorly to the pericardium.

In the abdomen were the following conditions: The liver weighed 8½ pounds, about twice the normal size; it was studded with abscesses large and small, was generally adherent to the diaphragm, stomach and colon. The spleen was dark and somewhat enlarged. Pancreas normal. Kidneys large, weighing 8 and 8½ ounces, respectively. The small intestine was apparently normal except the lower foot of the ileum which was as in the specimen; and the colon was ulcerated and thickened throughout.

Dr. S. S. Adams said that a soldier had been admitted to the Georgetown University Hospital, and the diagnosis of amebic dysentery was made. Subsequently abscess of the liver developed, but the patient refused operation and died. The autopsy revealed numerous hepatic abscesses very similar in appearance to those to be seen in Dr. Lamb's specimen. Amebae coli had been found in the stools, but Dr. Adams could not remember whether they had been found in the abscesses.

Dr. Heitmuller said that he was very glad of the opportunity to see the specimen. When a student at Johns Hopkins University he had had the pleasure of seeing a demonstration of ameba coli by Dr. Councilman.

Dr. D. S. Lamb wished to add that in about 95 per cent. of cases of amebic dysentery abscess of the liver occurs, unless the patient makes a rapid recovery or dies before abscesses have had time to form.

FUNCTIONAL DISTURBANCES OF THE NERVOUS SYSTEM DUE TO GASTRO-ENTEROGENOUS POISONS.*

By PHILIP S. ROY, M. D.,

Washington, D. C.

No subject in medicine is presenting greater difficulties for solution, both to the clinician and the laboratory worker, than that of enterogenous poisons. In looking over the literature on this subject I found most of the cases of enterogenous poisoning reported had been so classified, without a single chemical test having been made to confirm the clinical impressions. The diagnosis was generally made upon gastric pain, nausea, vomiting, a few nervous symptoms, and a statement from the family that some food had disagreed with the person.

I do not hesitate to say that no case should be considered one of gastro-intestinal toxemia unless the clinical history is confirmed by chemical or toxicity test. Some excellent laboratory workers, however unintentionally, have greatly discouraged the clinical worker. For illustration, I will mention Hemmeter's essay before the Ohio State Medical Association, in May, 1906.

Before calling your attention to the gastro-enterogenous poisons that affect the nervous system, let me speak briefly of the protective organs of the body that guard the nervous system against enterogenous and other poisons. The epithelium cells of the intestines, the cells of the liver, kidneys, muscles and other tissues protect the nervous system from the poisonous effects of indol, an enterogenous poison, by combining it with sulphuric acid and potassium, and probably there are other looser combinations. The cells of the liver combine the intestinal ammonia with carbon dioxide, making urea. The leucocytes formed so abundantly in the lymphoid tissues of the alimentary canal play an important part in protecting the system from intestinal poisons, for they only take up the peptones and fats when these are in a proper state for absorption. It is well known that the intestinal contents in normal digestion are toxic in certain stages of digestion, and but for the discriminating action of the absorbents we should be in constant danger of self poisoning. With the peptones the

* Read before the Medical Society, October 16, 1907.

leucocytes perform a more important function than absorption, for they change the proteins of digestion into blood proteins. In this action the leucocytes may be regarded, says Howell, as unicellular glands, the products of their metabolism serving to maintain the normal composition of the blood plasma.

Sir A. E. Wright has discovered that the handmaids of the leucocytes in performing this work of protection are certain substances in the blood plasma, which he has named opsonins. The internal secretions, from the ductless glands, and also from the stomach and pancreas, are protective secretions. That the thyroid gland protects the nervous system from autointoxication we have every reason to believe. I think we can speak more positively of the protection of the nervous system from gastric toxemia by the parathyroids. The relation of the parathyroids to tetany suggests this, and in one case of tetany reported due to gastric toxins, the parathyroids showed evidence of active cell multiplication. Engelen gives great weight to the protective nature of the internal secretions in screening the nervous system from toxemia. Including those I have mentioned, he cites the secretions from the adrenal bodies, testis, ovary and hypophysis.

I have not, in this short paper, considered the organic changes in the protoplasm of the nervous system due to gastro-enterogenous poisons, but Herter says that the time is near at hand when by modern methods the action of enterogenous poisons upon the motor, sensory, sympathetic, and nerves of special sense, must be investigated. On investigation, I find a number of reported cases of progressive muscular atrophy due to lesions in the ganglionic cells of the anterior horn, that as far as clinical and chemical tests could be applied, were shown to be due to intestinal putrefaction. Other cases of multiple neuritis seemed clearly due to intestinal toxemia.

Dr. Alfred Gordon, of Philadelphia, has written a most interesting and instructive paper entitled "The Rôle of Infections and Intoxications in Diseases of the Spinal Cord." He says lesions of the spinal cord may be due to toxins not introduced from the outside world; and says "toxic or any irritating substance developed secondarily to digestive disturbances gives place to autointoxication, which is apt to predispose to some degenerative condition of the spinal cord." In verification of Gordon's view, I found a very interesting paper by Kausch, entitled "Gastrectasis

in Spinal Cord Lesions." The autopsy showed marked spinal lesions that Kausch believes came from gastro-toxins. The toxicity of the stomach contents had been proven.

I will now consider some of the intestinal poisons.

Indol.

For the exact formation of indol in the intestinal tract I will refer you to any work on enterogenous poisons. It is sufficient for me to say that it is formed in the intestines from the putrefactive decomposition of proteids. Certainly for the last twelve years my clinical observations have never made me doubt that indol poisons the nervous system. Some cases puzzled me because I would find indol without any nervous manifestations, but modern research has given a clear explanation of why indol is not always a nerve poison. Its effects are controlled by the protective organs of the body, and to them we turn to explain the differences in its toxicity. Herter acknowledges that he underestimated the importance of indol as a toxic agent in man. Herter and Wakeman, in studying the toxic action of indol, found by experiments that the hepatic and renal cells and the epithelium cells of the intestinal tract possess the power of so combining indol by oxidation that the nervous system is screened from its action, and that when these screening organs do not act then the nervous system falls a prey to the action of the poison. But Herter and Wakeman did not know why these protective organs act at one time and not at another. This point has been beautifully cleared by the experiments of Richards and Howland. They found that any substance that would lessen the oxidizing powers of the body cells would cause the protective organs, epithelium cells, liver and kidney cells to lose their power to combine indol. Of course, we can see that in man any disease of the intestinal tract, liver or kidneys would bring about the same condition. Richards and Howland used the cyanide of potassium in their experiments, a substance possessing to a high degree the power of lessening the capacity of animal cells to take up oxygen. The doses of cyanide given were too small to produce any noticeable toxic effect upon the animal. The toxic effects observed in these experiments were similar to the toxic effects I have often observed in man. In addition, I have had patients describe nervous symptoms that could

not be observed in animals, the symptoms differing somewhat in each case, due to individual idiosyncrasies. As Herter expresses it, one patient suffering with indicanuria will have headache, another mental depression, another muscular atrophy, and still another cyclical vomiting. In their tests on animals, Richards and Howland observed muscular twitching, stupor, inability to recognize well-known attendants, frantic and poorly coordinated movements. When the indol was given without the cyanide none of these symptoms were observed. Herter then tried the action of indol upon a healthy young man. He obtained no symptoms until the second day, when the man became irritable, had headache and confusion of ideas. Prof. Lee, of Columbia College, has experimentally determined that indol produces great muscular fatigue. This neuro-muscular effect I have often observed both in children and adults, and have seen the fatigue rapidly disappear under treatment for indol poison. Herter thinks indol often retards the ability of children to walk by depressing the muscular power.

Hydrogen Sulphide.

Senator, in 1868, wrote a classic paper on hydrothyonaemia, meaning hydrogen sulphide in the blood. His description was, that after an error in diet the patient became ill with gastro-enteric catarrh. Most of the trouble seemed to be in the caecum. The nervous symptoms were marked, vomiting, dizziness, collapse without loss of consciousness. There were eructations of hydrogen sulphide gas and the urine gave a definite reaction for hydrogen sulphide. Other cases of hydrothyonaemia have been reported by Betz, Stefanio and Emminghaus. They describe the nervous symptoms in their cases with greater minuteness. Among the disordered functions of the central nervous system were headache, dizziness, delirium, mental depression, drowsiness, stupor and collapse. Two most remarkable cases of sulphide hydrogen poisoning were reported by Bergh in 1905, as cases of enterogenic cyanosis. Bergh at first believed that his cases had the same pathological basis as the case of enterogenic cyanosis first reported by Stokvis in 1902, who first used the name enterogenic cyanosis. But on careful investigation Bergh found that while his cases showed a sulphhaemoglobin spectrum of the skin and mucous membranes, Stokvis' cases showed met-

haemoglobin. On making a chemical test of the blood Bergh, with the Caro-Fischer reagent (amidodimethylanilin) obtained a blue color due to the formation of methyline blue, which indicated the presence of sulphide of hydrogen. Bergh therefore concluded that his patient had absorbed sulphide of hydrogen into the blood from the intestines. Van der Bergh's original paper is very interesting.

Nitrites of Intestinal Origin.

I will now refer more particularly to the case of enterogenic cyanosis reported by Stokvis in 1902, and which at first Bergh thought was pathologically the same as those he observed. Stokvis found methaemoglobin in his case, and immediately concluded from the gastro-intestinal symptoms that some poison had been absorbed from the intestines, but he did not know its nature. The following year Talma reported two cases of enterogenic cyanosis, but found no chemical poison in the blood to explain the methaemoglobin. As far as I am aware, not until Herter reported his two cases, and upon careful analysis found nitrites, were these cases of methaemoglobin proved to be of enteric origin, for it is well known that nitrites give a methaemoglobin spectrum. All the observers concluded that the cases of enterogenic cyanosis were due to the vaso-motor disturbance, no heart or lung lesions being found.

Intestinal Acetonuria.

No subject has been given more attention than the origin of the acetone bodies, and yet there are many questions still unsettled. Clinically I have never doubted since the early writings of Von Jacksch that acetone under certain conditions, both in children and adults, forms in the alimentary canal. Some of my clinical observations have made me believe that the liver was also involved. I have found great tenderness of the liver, some enlargement, with a low urea formation. This view that acetone may form anywhere in the system is in no way antagonistic to the views expressed by Knoop in his splendid paper in 1905 on the chemistry of the acetone bodies.

We all know that no poison more profoundly impresses the nervous system than the acetone bodies. I cannot better describe the effects of acetone bodies upon the nervous system than to give

you a case, reported by Engelen in the *Medical Review*, of Munich, 1905. A baby nine months old, with gastro-intestinal symptoms, had butyric acid in the feces and large quantities of acetone and diacetic acid in the urine, with the following symptoms: Vomitings, dilated pupils, irregular pulse, spasms, strabismus; later, coma and rigidity of the muscles of the neck. The spinal fluid was examined; no infection. Under treatment the child recovered. I will mention two or three of the most cardinal points in the treatment of acidosis. Freely move the bowels, give alkalies and carbohydrates, either by mouth or intravenously. The best carbohydrate is a monosaccharide.

Ammonia.

Ammonia is formed in the intestines in a normal state of digestion, and plays an important part, first in ridding the system of an excess of nitrogen by combining with carbon dioxide in the liver, and secondly, by maintaining the alkalinity of the blood in diabetes and other conditions of the system in which acidosis occurs, but Rochford by experiment has shown that if there is a great excess of acid in the blood, requiring large quantities of ammonia to correct it, the ammonia salts become poisonous, many times more poisonous than the corresponding salts of natrium and potassium. That ammonia affects the nervous system is known, for animals poisoned with it have tetanic spasms.

In a recent book on autointoxication, A. Combe classifies neurasthenia under the diseases due to enterogenous poisons.

Dr. Bishop thought that there could be no doubt that the majority of poisons entering the circulation directly or by autointoxication have a direct effect upon the nervous system. They may have three effects: They may stimulate so as to cause excessive metabolism; they may so paralyze the centers as to suspend secretions; or they may produce anabolism. Such effects may be upon the glands of internal secretion or upon the muscular system. In any event, their action produces changes in metabolism. If acting thus upon glands, we may have the effects of changes in their secretions, *e. g.*, diabetes, from changes in the pancreas; tetany, from changes in the parathyroids, etc. In the treatment of diseases, much is done without knowing the exact rationale of methods employed. He advocated the theory of electrical stimulation of the cerebro-spinal system with the hope of producing a resulting glandular activity. He thinks

that writers upon the effects of high-frequency alternating currents have much to support the theory in physiological facts. He expressed his pleasure at hearing such a good paper and congratulated the writer.

Dr. Lochboehler suggested the possibility that in Dr. Pool's case the nervous symptoms may have been due to the absorption of toxins.

Dr. Vincent congratulated Dr. Roy upon his paper. The subject is one that frequently taxes the powers of the practitioner. Dr. Vincent has often been perplexed in the treatment of colored patients by their erratic symptoms, and has found that their symptoms often disappear in a surprising manner after catharsis. He thinks that chemical examination in such cases as a clinical method is in its infancy. Very few poisons have as yet been isolated, but he believes that as chemistry advances many obscure diseases will be found to be due to putrefactive changes in the intestinal tract, and that many febrile attacks may be due to such poisons.

Dr. Carr said that the paper was a most timely and valuable one. The essayist had spoken of poisons that can be recognized chemically; but many symptoms can be produced by poisons existing in such minute quantities that they cannot be recognized, *e. g.*, those due to bacterial activity or to katabolism of body cells. Many of them may so paralyze the protective action of the epithelium of the digestive tract that they act like the cyanide of potassium spoken of in the paper; such bodies as guanin and the like act in this way. As for lysins and precipitins, they are most powerful, but they cannot be recognized by ordinary clinical chemistry. He has seen cases in which some such action as may be expected from a lysin had taken place, with complete disintegration of the blood into methemoglobin; some violent poison must have been responsible.

Dr. Randolph said that there is a continually widening circle of diseases which may be assigned to gastro-intestinal intoxications. He could agree with Dr. Vincent as to the variety of symptoms that may be seen in dispensary practice and that may be traced to chronic constipation; these patients present a chain of symptoms which allows of placing them in a definite class. In migraine, although due to heriditary and local causes to some extent, the immediate explosion of pain is often due to the absorption of intestinal toxins; the same may be said of epilepsy. In considering the prophylaxis, he drew attention to the importance of neutralizing the poisons and preventing their formation by adequate attention to the voluntary muscular system. These muscles are the laboratory for the conversion of waste products; when this activity is suspended, waste matter is thrown back upon the liver with the usual constitutional disturbances. He believes that much may be accomplished by educating and requiring the vol-

untary muscles to perform this "crematory function" assigned to them by nature.

Dr. J. D. Thomas had been interested in the subject from the clinical standpoint, especially with regard to acidosis. He had been struck by the fact that many cases occurred in persons who had no intestinal trouble. He thought that Dr. Roy was right in saying that many cases are due to the inactivity of the liver and other organs outside the intestines. There may have been, of course, some primary cause within the intestinal tract in such cases.

Dr. Roy said as to the acetone bodies, while as a rule they are not formed within the intestines, he wished it understood that they may be so formed. He was sorry to say that it is very true that many gastro-enterogenous poisons cannot be detected chemically; but they should be recognized when possible by inoculation into the lower animals.

CASE OF ENDOTHELIOMATOUS CYST OF GREATER OMENTUM. ABSTRACT.*

By EDWIN M. HASBROUCK, M. D.,

Washington, D. C.

Cysts of the omentum are of sufficient rarity to merit attention when one is found, the published records, so far as I have been able to follow the literature, numbering but thirty-seven cases. The case that I will report this evening is the thirty-eighth.

Reviewing the subject we find it first described by Gairdner, in 1851, and various theories have been advanced as to their origin. The fact that 65 per cent. of the cases have occurred under 20 years of age and 50 per cent. under 10 years, has led strongly to the belief that they are congenital, a belief not borne out by several published cases and by my own. Jacobi suggests that these tumors are of lymphatic origin, and result either from dilatation of the lymph vessels or from cystic degeneration of lymph nodes, and believes that it will always be a question whether the omental hydatid cyst originates in the liver or in the omentum. The contents of these cysts, however, together with their histological characteristics, are of such a wide variety that it is hard to sug-

*Read before the Medical Society, October 9, 1907.

gest a distinct etiological factor. Lymph, chyle, serum, both with and without bloodcells, have all been reported. My own case contained an enormous bloodclot. Two dermoid cysts have been reported by Waldy and Spencer Wells.

The presence of an individual capsule within the folds of omentum has been observed, but usually the tumor has been found separating the folds of the great omentum without any further encapsulation. Fort, of Nashville, reports in the *Annals of Surgery* an enormons omental cyst in a child 2½ years old, in which there was no capsule, the tumor consisting of a collection of fluid within the folds of the great omentum. This was exactly the opposite of my case, which consists of a tough capsule containing, as previously stated, bloodclot and an endothelioma. Moreover, Fort's case of 2.5 years leans to the theory of congenital origin, while my case, occurring in a woman 50 years old, who, up to within a year, had been perfectly healthy, goes to show that not all cases are of congenital origin and that in some we must look further for the etiological factor, possibly in trauma, which in my case is the only obtainable history of a possible factor.

Hearne reports a case occurring in a boy eight years old in which there was a fluctuating tumor at birth, which decreased in size for some time, after which distention became apparent. It was aspirated when four years old, refilled, and was removed at eight years. Unquestionably this was congenital. Cotman, on the other hand, reports the case of a woman, age 21, who was injured by being thrown against the shaft of a cart. A cyst was found in the curled up omentum connecting with a perforating wound in the stomach. This is the only case reported with a clear traumatic history.

Schraunn reports the youngest case in a child one year old. The abdomen measured 30½ inches in circumference, and the folds of omentum contained a dark grumous fluid.

My own case occurred in the practice of Dr. Pickford, by whom it was referred to me. Ala D., colored, married, age 50. About one year ago she noticed a swelling in the lower abdomen. It gradually increased in size until the abdomen became enormous, the distention extending up under the costal arches, causing them to bulge, and interfering very materially with respiration. Constipation was also a marked feature. So far as she knew, nothing

had ever happened to her as a possible cause, other than repeated blows in the abdomen, given by a small child butting its head into her as a pastime. At times the tumor pained some, but not to any great extent. Her principal trouble was from the great weight, difficult breathing, frequent micturition and constipation from pressure. Examination showed the abdomen enormous in size and distended apparently almost to bursting. In the prone position the swelling began from behind the ensiform cartilage and costal arches; breathing impaired. Tumor fluctuating. Vaginal examination negative. Diagnosis: multilocular ovarian cyst.

Operation.—Incision through right rectus. Abdominal wall very thin, not over one-quarter inch, including all layers. Immediately on opening the peritoneum the tumor presented itself, dark bluish-black in color. A trocar plunged into it brought away about half a pint of grumous fluid. There was also a small quantity of ascitic fluid external to the tumor. The tumor was semisolid and occupied the entire abdominal cavity except the deep pelvis. No connection whatever with uterus, ovaries or tubes, and the entire mass was completely enveloped in omentum, the veins of which were enormously distended, many of them nearly as large as a lead pencil. The transverse colon was pushed down almost to the symphysis pubis. There were very few adhesions, and these were mostly quite flimsy, easily broken down. There was one very firm fibrous band attached to the abdominal wall, and another to the stomach, a tough one almost like a pedicle, causing a suspicion that the tumor sprang from an old gastric ulcer. Later this was found to be only a dense adhesion. The wall of the stomach was slightly torn in the external coats in separating this adhesion, and was whipped over with catgut. There were also some dense adhesions to the mesocolon and everywhere to the omentum. In fact, very little of the omentum was saved. It was ligated in bunches and divided in order to turn out the tumor, but, owing to the large size and solid contents, this was found impossible. Accordingly the sac was opened and many handfuls were removed before it became possible to pull the tumor through the incision. These contents resembled washed-out bloodclot as much as anything. There was no pedicle.

After removal of the tumor the liver was found much atrophied

from long-continued pressure, pale and anemic, and containing several small retention cysts which were punctured. Many bleeding points required ligation where omental adhesions had been ruptured, and a rent in the meso-colon was sutured. Salt solution was given and about a quart was sewed up in the abdominal cavity. Morphine-hyoscine anesthesia was used supplemented with a few whiffs of chloroform.

The patient reacted well from the operation; there was no shock, and made an uneventful recovery.

The specimen as removed and shown this evening weighs eight pounds, which probably is not one-third its original size; much was unavoidably lost; in its original condition it probably weighed not far from thirty pounds. It sprang from the omentum between the stomach and transverse colon and had a thick, tough sac, as you will observe.

A regards symptomatology and diagnosis I can do no better than quote Fort's admirable paper in *Annals of Surgery* for March, 1907.

Symptomatology.—It is rare that these tumors are observed in the earlier stages of their development. Pain is not usually an accompaniment, and when it is present, it is not severe in character, and is usually attributable to digestive disturbances, though several observers have noticed that the pain radiated toward the liver. It has also been observed that during the pain there are marked digestive symptoms, anorexia, dyspepsia, vomiting, diarrhoea alternating with constipation, and even cachexia.

The costal type of respiration and severe dyspnoea have also been observed. Hahn states that the especial symptoms of tumor of the omentum present an extraordinary analogy to those of movable kidney. I can see that this may be true in those cases in which we have a disturbing symptomatology, but in my own case as well as others there was an absence of subjective symptoms sufficient to point to any diagnosis. It is evident, therefore, that omental tumors present no characteristic symptoms, and the clinical picture is that which accompanies all the other forms of cystic abdominal growths.

This is emphasized by the fact that the omentum possesses no physiologic function other than that of a covering membrane. Therefore, it is most natural that small tumors will produce no

symptoms and that symptoms will be produced only when the weight of the tumor causes dragging or when pressure occurs.

Diagnosis.—As yet no case has been reported in which the diagnosis has been made. The condition simulates such a wide variety of disorders that almost everything else has been diagnosed; ascites, lipoma, ovarian cyst, aortic aneurysm, hydatid cyst of the liver, cyst of urachus, cyst of the mesentery, pancreatic cyst, tubercular and encysted peritonitis have all been named.

Pean mentions three pathognomonic points of tumor of the omentum: superficial location, abnormal passive mobility with downward limitations, and absence of functional disturbances. Pean, as well as others, however, has failed to make a diagnosis.

Dr. I. S. Stone said that the specimen was unusually rare and interesting. He was sorry that no microscopical examination had been reported; the discussion must necessarily lose much point without it. Sometimes portions of other organs—*e. g.*, the uterus, ovaries, etc.—become adherent to the omentum and incorporated in it, forming the basis of large tumors; and he was anxious to know if any such structures had been found. The presence of blood clots suggested torsion of the tumor. Some pathologists deny the possibility of omental cysts; there may be lymphatic or blood vascular cysts or hydatid cysts. But none of these would explain the character of this particular specimen.

Dr. D. S. Lamb said that the specimen looked like a cyst undergoing sarcomatous or angio-sarcomatous degeneration. The growth in the specimen springs entirely from the inner surface of the omentum; the outer surface is not involved. It seemed not at all unlikely that it is a sarcoma of a serous membrane.

Dr. Hasbrouck said that it was not at all impossible for the tumor to have arisen from a vagrant portion of other organs; he could not say himself, nor had anyone else given a decided opinion as to the exact origin of such cysts. He had expected a pathological report but had been disappointed at not getting it in time.

[The microscopic examination showed that the growth was an endothelioma. Anatomically this may have affected a part of the great omentum that had been formed into cavity by fusion of its own layers, as so often occurs.—Ed.]

CASE OF CONGENITAL (?) HYPERTROPHY OF PYLORUS.*

By B. G. POOL, M. D.,

Washington, D. C.

Walter E., white, age 17, native of Virginia. His father died from some obscure disease; mother, brother and sister living and in good health. Dr. Pool first saw the patient March 8, 1907; he complained of pain in the chest, dyspnoea and dysphagia. Several years previously he was struck on the chest and since then had suffered more or less. In October, 1905, while riding horseback the horse fell with him and hurt his chest. From that time he continuously complained. Examination failed to discover the cause of his symptoms; the thorax showed no sign of injury. Pulse and temperature, heart and respiratory sounds normal, pupils equal and responded to light, vertebral column in proper relation, knee reflexes easily obtained. He sat propped up in bed because, as he said, he could not breathe lying down; this position he kept almost constantly for six months. When Dr. Pool first saw the patient he could walk across the room, but for the last three or four months of his life he could not get out of bed, and could barely move himself in bed. He persistently held his left hand to his sternum until his hand seemed deformed, and wailed with pain most of the time day and night. Hypnotics and anodynes had little effect; he said that morphia only confused him without relieving pain.

April 3d, pulse 80; numbness of limbs, especially his arms; pain in back of neck; cramp of jaws; agonizing pain across lumbar region and through abdomen; slept poorly. He heard well and understood what was said, but spoke in whispers; said that the top of his head felt as if it would come off when he swallowed. About this time he had double vision; right arm seemed to be partially paralyzed; occasional vomiting.

April 8th, pulse 90, respiration 24, temperature 98.2. 22d, he complained of the bones at the back of his neck grating together, and of his head and arms being alternately cold and hot. 25th, vomiting; this occurred only occasionally, but toward the last of his illness he practically took no food; condition of body fair.

* Reported to the Medical Society, October 16, 1907.

June 9th, his condition was better; was taking the iodide of iron. July 15th, was seen in consultation by Dr. R. M. Ellyson. For seven weeks in July and August he was much constipated. August 19th, he had eaten nothing for several days, and from this time he took but an insignificant quantity of food—on one day, particularly, he had only a piece of pickle and a cracker. He emaciated rapidly, and died September 3d.

His mind seemed clear throughout, though he answered questions with difficulty. During the latter part of his illness he drank much water, and also moved his limbs freely, showing that he was not paralyzed.

Dr. D. S. Lamb, who made the autopsy, said that the specimen consisted of the pyloric end of the stomach, showing a marked hypertrophy of the circular muscle. The body had been embalmed and the stomach punctured by the embalming syringe and its contents evacuated. The head, neck and spinal cavity were not examined. The heart was small but otherwise appeared normal. Lungs generally normal; no pleurisy. Oesophagus normal; intestines appeared normal, not opened. Liver, pale; gallbladder, full of bile. Spleen, pancreas and kidneys normal. The body was much emaciated and there were bedsores. Some right lateral thoracic curvature of spine. Microscopical examination of the pylorus showed marked increase of circular fibers.

Congenital hypertrophic stenosis of the pylorus was a form of pyloric obstruction in which there was a notable increase in the muscular layer, particularly the circular fibers, and a varying degree of hyperplasia of connective tissue of the submucosa. In a case reported by Thomson there was an increase in lymphoid tissue of the submucosa. There has been much discussion as to whether the stenosis is spastic or hyperplastic. Thomson and a number of observers hold that the spasm is primary and the hyperplasia secondary. Cautley believes that the first change is a hyperplasia, or notable increase in the muscle, and that the spasm is secondary. At autopsy or operation the pylorus is found much thickened and lumen so narrow that it may be impossible to force the gastric contents through the opening. When seen from the duodenal side the pylorus often projects into the duodenum, resembling the projection of the cervix uteri. Sometimes a longitudinal fold of gastric mucosa occupies the opening, showing that the lumen has been much diminished after the mucosa has

developed. Microscopic examination shows an enormous broadening of circular muscular layer with little if any increase in the longitudinal fibers. In some cases there is an increase of fibrous tissue within the muscle. The stomach is usually dilated and sometimes the walls thickened.

Dr. Chappell said that he had seen the patient a month or two before death and had examined him very carefully without making a diagnosis, but had been able to assure himself that there was no disease of any of the great organs nor of the spine. There was no evidence at that time of pyloric stenosis. He thought that the condition was due probably to some psychic state following an injury.

Dr. Carr was interested because he had seen several similar cases. The lesson to be learned is that the diagnosis of spasmodic pyloric obstruction in cases of obscure pain about the stomach, with vomiting, may be made even when no dilatation exists. Dilatation is not so frequent in spasmodic stricture as in organic stenosis, but the pain is apt to be greater. The pain is intense, like in other hollow organs attempting to empty themselves. He believes that nearly every painful intestinal disease is due to some sort of obstruction; the most frequent place of obstruction is the pylorus, next the ileo-cecal valve and next the sigmoid. Gastro-enterostomy has relieved many such cases as that reported by Dr. Pool, with nothing further than pyloric thickening to account for the symptoms. Dr. Stone and Dr. Prentiss have both operated on such cases with complete relief of the patients.

Dr. I. S. Stone said that Dr. Carr had well covered the ground. In such cases the physical examination of the stomach should be very thorough to determine the extent of motility. No doubt Dr. Pool had worked under great difficulties in his case. There is not always evidence of retention of stomach contents; careful examination may reveal competent motility, and yet operation may relieve the symptoms. He himself has operated on such cases. They have only been explained since the work of Mayo and others.

Dr. Pool said that it is easy to refer symptoms to the pylorus after finding the obstruction. Prior to autopsy the symptoms pointed rather to the esophagus; the greatest difficulty with the patient was in swallowing. Dr. Pool still feels at a loss to account for the nervous symptoms.

CASE OF "VIAVI" TREATMENT.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

In the spring of 1906 a young woman in Philadelphia consulted her physician about a pelvic tumor, and a diagnosis of uterine fibroid was made. An operation was advised. After some consideration she declined operation, and began the "Viavi" treatment. She has kept this up for eighteen months. The treatment consisted in the application of ointments to the abdominal surface, the use of capsules by vagina, and topical application of the electric current to the uterus. From time to time she had hemorrhages by vagina, more or less severe. From time to time, also, masses passed by vagina were saved and accumulated until they filled a quart bottle. These portions were sent to me at the Army Medical Museum with request that they be examined. They were accordingly examined and found to be simply bloodclot. The woman is still under treatment; she says that the tumor is smaller and that her health is better. The point, however, of the matter is the fact that the masses represented as portions of the tumor are only the concrete results of the hemorrhages.

Dr. Jas. Stuart had seen a case very similar to Dr. Lamb's. The woman was an agent for the Viavi remedies. She used some sort of capsules. She passed enormous masses from the uterus, the nature of which he had not determined. He thought she was suffering from some sort of membranous endometritis.

Dr. R. S. Lamb said that he had had occasion to look up the status of the Viavi treatment, and had found that the remedies consist of a liquid preparation, a cerate, capsules or suppositories and a douche. The only active agent that has been found in these preparations is fluid extract of hydrastis. The whole Viavi idea surrounds the hot vaginal douche.

Dr. Bovée said for the benefit of those interested that he would refer them to a recent article in *Collier's Weekly*.

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* Reported to the Medical Society, October 30, 1907.

ON THE PREVENTION OF DEATH DURING ANAESTHESIA BY CHLOROFORM AND ETHER.*

By ROBERT REYBURN, A. M., M. D.,

Washington, D. C.

One of the most horrible occurrences that can occur to a physician is the death of his patient during anaesthesia. It is unfortunately true that in a certain indeterminate number of cases death will occur during anaesthesia by these substances, when every precaution has apparently been taken and they have been given by trained experts ; yet the writer believes that the number of the fatalities we now meet with is greater than can be properly accounted for, and arises from the neglect of certain precautions, which it is the object of this paper to endeavor to point out.

As yet we have discovered no perfect method of producing anaesthesia. What we want is some substance that is capable of producing insensibility to pain without danger to life, and it is to be hoped that in time our chemists may discover it.

It is the belief of a great number of the members of the medical profession that anaesthesia by ether is almost devoid of danger to life. This belief is not shared by the writer, and in his opinion anaesthesia by ether is nearly as dangerous as by chloroform.

It is true, death does not usually result as quickly during ether anaesthesia as it does during the administration of chloroform, yet the fatality is just as certain to result, in a number of cases, in the one as in the other.

Death by chloroform is usually speedy and almost instantaneous. The respiratory and cardiac centers are so overwhelmed by the poisonous vapor that the patient sinks quietly into eternal sleep.

Death by ether is usually, though not always, differently produced, and occurs in two ways.

In the first method of death it may occur in a way very much resembling that of death by chloroform, and there is sometimes

* Read before the Medical Society, October 23, 1907.

asphyxia by the concentrated ether vapor, with speedy death. The writer has seen ether given for anaesthesia in a most reprehensible manner. He has seen the ether cone held over the face of the patient so closely as not to allow the proper admixture of air, in spite of the struggles of the patient. He objects to every complicated apparatus for the induction of anaesthesia, and objects even to the cone, for in a prolonged operation the cone often becomes so wet with the ether as to give a too saturated ether vapor to the patient. A simple metallic framework covered with one layer of muslin is much better, and the drop method of anaesthesia should always be used, whether chloroform or ether is the agent employed.

One reason for the fatality during anaesthesia has been that undergraduates, in many of our hospitals, have been allowed to administer the anaesthetic.

Anaesthesia should be regarded as a major operation, which always involves danger to life, and should always be administered by experts, and under the strict supervision of the surgeon.

There is another and slower method of death during ether anaesthesia, which is very different from the first method, and may occur at any period, from five days to a month, after the period of anaesthesia. This is caused by the ether vapor in prolonged anaesthesia being absorbed in large quantities, producing a form of acute nephritis, which may cause suppression of the urine, coma, convulsions and speedy death.

About twenty years ago the great English Surgeon, Lawson Tait, wrote an article describing the histories of several cases of death occurring at periods varying from a few days to a month after surgical operations in which ether had been used as the anaesthetic. This condition admits of ready explanation when we recall that the renal artery is one of the largest branches given off from the abdominal aorta, and hence furnishes a ready vehicle for the absorption of ether vapor.

Deaths after ether anaesthesia may also occur by the irritating effect of the vapor upon the bronchial mucous membrane. When we consider the enormous surface exposed by the terminal bronchi and air cells to the action of the atmosphere and to any vapor mixed with it, this is not to be wondered at.

Dr. Dalton estimated that the air cells of the lungs exposed a surface equal to sixteen hundred square feet.

Ether vapor is to many persons excessively irritating, and produces a form of bronchitis or broncho-pneumonia, which in a few days may prove fatal.

Deaths occurring from either of these causes from five days to a month after the anaesthesia are often attributed to shock and other causes, but are probably often due to the anaesthesia.

How can the first method of sudden death from either chloroform or ether be averted?

The first step, and one to which the writer attaches more importance than any other, is the rapid inversion of the patient and preferably in the prone position.

Late researches on the resuscitation of drowned persons have shown that the prone position for the revival of such patients is much better than the supine, and have shown that artificial respiration in that position is much more effectual.

What is the mechanism of the sudden death in these cases? The writer believes that it is directly caused by the column of venous blood filling the jugular and innominate veins, thus pressing upon the auricle and preventing it from opening. When the patient is rapidly inverted (with the head downwards) the venous blood drains back toward the brain and allows the auricle to open and the circulation to begin. Of course, this must be done instantly, for seconds, not minutes, count for life or death. He does not believe much in the hypodermic use of strychnine or nitroglycerine in these cases, for before the drug can be absorbed the patient is usually dead.

The hypodermic use of the suprarenalin solution is highly recommended in this class of cases, but the writer has not had the opportunity to use it. A Faradic battery is often of inestimable service, and should invariably be at hand when a patient is about being placed under anaesthesia.

The writer well remembers a case of threatened death during the inhalation of a mixture of chloroform, alcohol and ether (the A. C. E.) which taught him a useful lesson.

A woman patient in Freedmen's Hospital required a simple incision, and at first it was not intended to use any anaesthetic. The patient, however, objecting, he, with inexcusable carelessness (without calling for an assistant physician who was in the next room), reached to the side table and, taking the inhaler, poured an ounce or two of the mixture in the cone and caused

the patient to inhale it. To his horror, the patient, after a few whiffs of the mixture, suddenly collapsed. Her breathing ceased, her heart stopped beating, and she was practically dead.

A man can think a good deal in a few seconds at a time like that. There was no time to call for assistance, so he quickly threw the patient over his shoulder, with the legs of the patient in front, and the rest of the body, head downwards, hanging down his back. After two or three minutes—which seemed to him like hours—had been passed in this position, he heard a gasp of returning breathing, which seemed to him the sweetest sound he had ever heard. His patient rallied without any further trouble.

The writer has seen many narrow escapes from death during anaesthesia, but the only case of death he remembers that actually occurred while he was present was in the case of Rev. Father Boyle, which occurred in Providence Hospital some years ago. In that case, which was during ether anaesthesia, the face of Father Boyle turned perfectly black. In such a condition of venous stasis, the writer would suggest, if other means fail, the opening of one of the jugular veins to relieve the pressure of the column of venous blood which shuts up the auricle and stops the circulation.

The chronic form of death which occurs by the poisonous action of the ether vapor upon the kidneys and the bronchial mucous membranes is largely preventable, and is due, he believes, chiefly to the prolonged anaesthesia.

The writer would earnestly plead for rapid surgical operations. When an operation is prolonged over one or two hours the danger to the patient is enormously increased, not only from the ether vapor but from the toxins which are accumulated in the system during the condition of anaesthesia.

The writer never saw a death occur during anaesthesia while on duty as medical officer during the civil war, 1861–5. The anaesthetic used during the war was mostly chloroform, but the A. C. E. mixture was used considerably in the latter stages of that terrible conflict.

The writer has had an abundant experience in the induction of anaesthesia, both during and for many years subsequent to the civil war. He reported for duty on the seventh day of May, 1862, as Acting Assistant Surgeon, to the Surgeon General's

Office, Washington, D. C. He had expected to be ordered to join the army of General George B. McClellan, who was then waging his disastrous campaign on the peninsula in front of Richmond, Va. Very much to his disgust, however, his order was countermanded, and he was ordered to report to Surgeon John E. Summers, Medical Director of the hospitals in Alexandria, Va. This change of program was, however, ultimately greatly to his professional advantage. The disastrous campaign of General McClellan in 1862 culminated in the Northern army being driven back from the vicinity of Richmond to the region of country in front of and adjoining Alexandria. The battle of Manassas (or, as it is often called, the Second Battle of Bull Run), the battles of Cedar Mountain, Chantilly and the two battles in front of Fredericksburg, were all fought within a short distance of Alexandria.

The rush of wounded and sick soldiers to our hospitals after the above mentioned battles was almost indescribable. After taking possession of every empty house, church, schoolhouse and public building in Alexandria for hospital purposes, after the battle of Manassas, we fed in one day twenty-two hundred sick and wounded soldiers who were still in the ambulances and army wagons in which they had been conveyed to Alexandria.

There is one fatality that has not been mentioned, which is the result of chloroform anaesthesia, and this is acute yellow atrophy of the liver and kidneys. The following extract from the *Medical Record* of October 19, 1907, is illustrative of this point:

"*Acute yellow atrophy in consequence of chloroform anaesthesia.*—Guleke's patient was a robust young woman on whom a herniotomy, lasting half an hour, was performed under 25 cc. of chloroform. The anaesthesia was unusually smooth; hernial sac contained only omentum. Jaundice and cholemia developed in less than 24 hours, and at the end of 92 the patient died in coma after delirium and convulsions. The microscope revealed extreme destruction and fatty degeneration of the cells in the liver and in the convoluted tubules in the kidneys. The chloroform was evidently responsible for the trouble, as infection and thrombosis could be excluded. The same chloroform, used for other patients the same day, caused no by-effects in other cases. All the similar cases of yellow atrophy of the liver on record, following administration of chloroform, terminated fatally in

from three to six days. The patients were generally young and robust. It is noticeable that the operations had always been abdominal and that the patients were moderately or extremely fat. Other facts are cited which suggest that an unusually fat liver is less resistant to chloroform than one less so."

Finally, to recapitulate the precautions for anaesthesia:

1. Give the ether or chloroform drop by drop.
2. Operate rapidly, thus diminishing the time of anaesthesia.
3. Invert the patient, in case of threatened death, preferably in the prone position.
4. Have an electric battery of the Faradic type ready.
5. Use artificial respiration.

Dr. J. Ford Thompson said that his experience with regard to fatalities from anaesthesia corresponded with that of Dr. Reyburn, although Dr. Thompson has seen such cases at the hands of others. He has never been very particular as to the choice of anaesthetic, except that in children he prefers chloroform, with old persons and with patients having some organic disease he prefers ether. His preceptor in surgery, Dr. Nathan R. Smith, had a prejudice against anaesthetics and ascribed to them many of the post-operative accidents like pyemia, etc. Probably the most painful experiences of Dr. Thompson's life had been holding Dr. Smith's patients for operation without anaesthesia. In England chloroform has the preference, and has for years been given in the same way. They use a sort of atomizer-like inhaler, and he had given it himself in that way at least 25 years ago, under Thornton. He has, himself, taken chloroform several times and has found the English method a very pleasant one. He has always had a prejudice against ether on account of the disagreeable preanaesthetic symptoms.

The bad after effects ascribed to ether by Dr. Nathan Smith he thought not proven. It is so common to keep patients under anaesthesia for hours without any bad effects; Dr. Halstead with his extreme slowness has the lowest mortality rate of any surgeon. Halstead has immortalized himself by his method of breast amputation, and he says that no case can be completed in less than three hours. He says the danger arises from the loss of blood, not from the ether. The so-called brilliant operations of the old surgeons were the result of the necessity for speedy termination of the patient's suffering, but such methods are no longer proper. Of course the surgeon must not be unnecessarily slow, but he has no right to be recklessly rapid.

While the administration of the anaesthetic is very important, Dr. Thompson has not paid much attention to it. He has had little cause to complain of the manner in which the young men

in the hospitals give it. He believes there has been little progress in the methods of giving anaesthetics. He does not think that the administration of an anaesthetic can properly be called a major operation, as Dr. Reyburn had classed it; his own mortality rate excluded it from that classification. One of the greatest modern blessings has been the improvement in the methods of local anaesthesia. The use of dilute solutions of the anaesthetic agents has eliminated all danger of systemic effects.

As to methods of resuscitation from collapse under chloroform, he has found inverting the patient an excellent practice and he has frequently used it. He has also found mouth-to-mouth breathing useful and necessary in many cases. The galvanic battery should undoubtedly always be at hand; he has found, however, that when wanted it is usually absent.

His own pleasant experience with chloroform should not lead to any conclusions as to its superiority over other anaesthetics. The single experience of one surgeon cannot be depended upon; the collated experience of very, very many men is necessary to arrive at conclusions.

Dr. Vaughan said the paper had been very interesting. Anaesthesia must always be of interest to the surgeon. There were many points about the paper he would like to discuss. The ideal anaesthetic has not yet been discovered. While he has never had a death on the table from anaesthesia at his own hands, he has seen four such deaths—two from ether and two from chloroform; they all seemed to die in the same way. We do not know precisely why patients die under anaesthesia. He does not know how many patients he has lost from after effects; perhaps more than he suspects.

As to anaesthesia being a major operation, that is a matter of opinion; he knows that a very decided state of shock can be produced by it without the loss of a single drop of blood.

As to speed of operating, the too-rapid man is dangerous; and so is the man too slow.

We must look to the future for the perfect anaesthetic. The morphin-cactin-hyoscin method is nothing more, in his opinion, than morphin poisoning; patients under this combination present precisely the same symptoms as we see in morphin poisoning.

He thought that Halstead should not be given entire credit for the radical breast amputation when Volkmann had done the operation so many years prior to him.

Dr. Hasbrouck has had some small experience with anaesthetics and has given all methods a thorough trial. He has used nitrous-oxid-ether and has liked it; he has used somnoform-ether and has liked that also. He has not at present any preference for one over the other. This much is certain, the anaesthetic contributes in no small degree to shock—with less anaesthetic there will be less shock. With the open inhaler more ether must

be used than with the closed method. He has used the latter for six years and has had no death and no dangerous approach to death. With the closed method he can take a patient through an hour's operation with less ether than is required to get the patient under it by the open method.

Somnoform-ether has now been used in a vast number of cases with a very slight mortality. With this combination three ounces of ether is sufficient for an operation of one hour duration.

He has had two unfortunate experiences. In one case he had given nitrous-oxid ether for a simple operation; the patient was back in bed and coming out nicely when she suddenly collapsed, but did not die. In the second case, somnoform had been successfully given several times for the removal of drainage. The patient was back in bed and recovered sufficiently for the doctor to leave. He went out of the city and on his return heard that this patient had never fully regained consciousness and had died. The exact cause of death was not known. He called especial attention to the value of adrenalin as a heart stimulant in chloroform collapse. He would never forget a demonstration of its efficacy in the hands of Roswell Park. He has himself used it with success in a number of cases. Every anaesthetist should keep it on hand.

Dr. Mackall had an alarming experience last spring, in which one of his patients was given ether by an expert. The child became cyanotic in five minutes after the anaesthetic was started, and was with difficulty revived. The cause was found to be the profuse flow of saliva, which was actually drowning the child. Evidently there was some idiosyncrasy in this case.

Dr. Lewis knew of two cases which had been operated upon for appendicitis, in both of which two days after operation the patients became jaundiced, delirious, and presented the picture of acute yellow atrophy of the liver. They both died. Chloroform had been given in both cases. He would like to hear of some way to prevent this accident.

Dr. Kober had noticed a new and very intricate apparatus in the hospitals in Berlin, last summer, in which the dose of ether and chloroform was regulated with great minuteness. The anaesthetic was conducted to the mask through a tube; there was also an attachment for the introduction of oxygen. There were very minute markings to show the exact quantity of the anaesthetic used.

Dr. Reyburn expressed his thanks for the generous discussion of his paper. The subject was chosen for the purpose of stimulating greater care in the use of anaesthetics. The rapidity of operating would depend upon the skill of the individual operator. He could not see how it could be advisable to spend three or four hours in the removal of a breast; he does not believe that it is justifiable to expose a patient to such a prolonged administration of a deadly vapor.

TUBERCULOSIS OF THE PLACENTA.*

By EDWARD E. MORSE, M. D.,

Washington, D. C.

Tuberculosis of the placenta has always been considered one of the rarest forms of tubercular infection. In an exhaustive study of the literature of the subject Warthen and Cowie, publishing the results of their research in the *Journal of Infectious Diseases* for January, 1904, were able to report but eight undoubted cases of tuberculosis of the placenta. In June of the present year the same men were able to bring the list up to twenty, the rule laid down by them being: "The presence of characteristic anatomical changes and of tubercle bacilli, the development of the lesions within such a short time after birth as to preclude the possibility of extra-uterine infection, and the exclusion of syphilis." In consequence of the strict application of this ruling many cases reported as placental tuberculosis were not included, although in many instances they furnished strong presumptive or probable grounds of being in reality what they purported to be. Failure to examine the same from the standpoint of rigid scientific methods compelled their exclusion.

The first undoubted case of congenital tuberculosis was described in 1885 by Johne. This was the case of a calf fetus of eight months found in the uterus of a cow which had died of tuberculosis. Since then numerous cases occurring among the lower animals have been reported, but the rather loose and unscientific methods of the veterinarian render their results valueless from an exact point of view. Since 1825 various cases of so-called placental tuberculosis have been recorded. Schmorl and Birsh-Hirschfeld in 1891 described the case of a seven-months fetus born of a tubercular mother, the characteristic bacilli being found in placenta and liver. Sabourad in the same year described a case in which miliary tubercles were found in the liver and spleen of the infant. This child died at the age of eleven days, the mother, being in an advanced stage of phthisis died shortly after delivery. The autopsy of the infant showed the presence of great numbers of tubercles in the liver and spleen, the same showing caseation and containing tubercle bacilli. Hauser in

* Read before the Medical Society, October 30, 1907.

1898 found in reviewing the literature of the subject eighteen cases which he classified as follows: Nine with extensive tuberculosis of the fetal organs; five in which there were tubercle bacilli but no tubercles in the fetal organs, and four cases of placental tuberculosis. Of the twenty cases which Warthen and Cowie regard as *bona fide* cases, thoroughly tested by the rule they have laid down, two were reported by Lehmann, three by Schmorl and Kockel, two by Warthen and Cowie, one by Auche and Chambrelante, one by Runge, nine additional cases by Schmorl, and one by Wollstein. It must be remembered, in considering the apparent rarity of cases of this character, that it is a subject which has received very little attention except at the hands of a limited number of observers. If there are so few cases reported and examined it is because the diseases of the placenta are usually overlooked. Doubtless if placentas were preserved and carefully studied, tubercular disease of the organ would not infrequently be found to exist. In view, however, of the temporary character of this organ, which is cast off in the act of birth and thus lost for purposes of study, unless especially preserved, the evidence which it alone could furnish as the connecting link between tuberculosis of the mother and of her offspring, is wanting. If more placentas were studied I have no doubt more evidence would be forthcoming to prove that in many of the cases of undoubted tuberculosis occurring in the young, usually with fatal result, it would be found to have been derived from the mother by the medium of the placenta while yet the child lay *in utero*. In support of this view we have the well-established fact that various diseases are transmitted from the mother to the unborn child. Osler (*Modern Medicine*, 1907, page 30) says:

"Pathogenic germs may pass from mother to fetus and practically probably always by way of the placenta. Intrauterine or placental infection of the fetus has been observed in smallpox, measles, scarlatina, syphilis, typhoid and relapsing fever, pneumonia and tuberculosis. The placenta may be sound and yet placental and fetal blood contain bacilli."

The active source of infection is, of course, the tubercle bacillus itself. A mother suffering from tuberculosis in any of its forms would be a probable origin of infection. It would appear that localized infection of the genital tract would be a most direct cause, and again, infection of the ovum through infected

spermatozoa. That an infected genital tract does result in disease of the placenta is confirmed by one of the cases reported by Warthen in the *Medical News* for 1896. This was a case of tubal gestation with tuberculosis of tubes, placenta and fetus. Rupture of tubal sac in the fourth month; operation; advanced tuberculosis of tubes and wall of sac; chorionic villi involved directly by extension from wall of tube; typical tubal and chorionic villi; few tubercle bacilli found. That involvement of the uterus and appendages does not always or necessarily produce changes in the placenta and fetus, however, is shown by Williams, who takes the ground that tuberculosis of the placenta is extremely rare. In justification of his views he cites the case of a woman in the Johns Hopkins Hospital who had been a victim of tubercular peritonitis, and died shortly after an operation. The autopsy showed the exterior of the uterus to be studded with tubercles and the interior was covered with tuberculous ulcers and caseous material. Guinea pigs inoculated by a solution made from placental tissue, however, failed to produce results, and the child was apparently healthy and so continued for some months afterward. In attempting to find a cause which would reasonably account for a non-involvement of a placenta in a given case, account must be taken of the power of resistance in the tissues, the duration of the infection and especially the fact that the placenta is a temporary organ or gland and might with much probability be cast off before it became a seat of infection. As I shall endeavor to point out later in the discussion of the pathological features of the case, much depends on the integrity of that epithelial membrane which marks the dividing line between the maternal and fetal blood stream known as the syncytium. In lieu of any case of my own to present to you tonight, I must beg your indulgence while I cite briefly a few of those cases of undoubted placental tuberculosis which have been recorded from time to time. The diagnosis rests upon the demonstration of histological changes and the presence of tubercle bacilli in the placenta (*Journal of Infectious Diseases*, January, 1904).

LEHMANN, 1893–4.—*Case I.*—Woman aged 26 years, died of general miliary tuberculosis in seventh or eighth month of pregnancy. A male child removed by Caesarean section, five minutes after death of mother, dead. Only abnormal changes found, two grayish nodules in the right apex. Pieces of liver and spleen

were inoculated into guinea pigs. General appearance of placenta normal. In several places small miliary nodules, grayish, semi-translucent and sharply outlined. The microscopic examination of fetal liver and lungs gave no appearance of tuberculosis. No tubercle bacilli found. The placental nodules presented the appearance of typical caseating tubercles containing few tubercle bacilli.

Case II.—Mother died of chronic tuberculosis of lungs and larynx. Child died ten days after birth. Presented no evidence of tuberculosis at autopsy. Typical caseating tubercles containing tubercle bacilli found in the placenta.

Schmorl–Kockel, 1894.—*Case I.*—Woman, aged 26, died of chronic pulmonary tuberculosis and miliary tuberculosis; seven months pregnancy. Child removed by Caesarean section lived two hours. No histological changes of tuberculosis or tubercle bacilli found in fetus. Placenta appeared normal to the naked eye. Numerous tubercle bacilli found in smears from placenta. Animal inoculations negative. On microscopic examination placenta showed typical tubercles in all stages. Tubercle bacilli in large numbers.

Case II.—Mother, aged 25, died of general miliary tuberculosis. Fetus removed at autopsy. No evidences of tuberculosis in fetal organs. Tubercle bacilli found in fetal liver. Animal inoculations negative. Typical tubercles containing typical bacilli found in placenta.

Case III.—Woman, aged 33, died in ninth month of pregnancy, pulmonary tuberculosis. Child removed by Caesarean section, dead. No signs of tuberculosis, no tubercle bacilli found in fetal tissues. Placenta showed no naked-eye appearances of tuberculosis. Inoculations negative. Microscopically the placenta showed typical tubercles in varying stages. Tubercle bacilli present in large numbers.

Auche and Chambrelante, 1898.—*Case I.*—Mother far advanced in tuberculosis died three days after premature delivery in seventh month. Placenta showed numerous caseous tubercles containing tubercle bacilli. Inoculation of guinea pig positive. Child lived 26 days. Autopsy showed extensive tuberculosis.

Tubercular infection of placenta is usually described as occurring in several forms. Warthen, in his most recent paper on the subject, makes five divisions, as follows: Decidual, Inter-

VILLOUS, INTRAVILLOUS, INTRAVASCULAR CHORIONIC and CHORIO-AMNIOTIC. Of these, the decidual is distinguished by the absence of tubercle formation. Epithelioid and giant cells are wholly absent in the lesions involving the decidual tissue. The lowest portions of the basal decidua do show such formation, but it is regarded as forming the uterine tubercle, instead of a decidual one. Such lesions as do occur in the decidual tissue are in the nature of a caseous necrosis. Throughout the decidua occur areas of necrotic tissue of varying size. In many of the larger foci are centers of partial liquefaction and pockets of caseous matter. In close connection with the above described areas of necrosis will be found thrombi, superimposed on which are layers of fibrin, the larger of them extending into the intervillous spaces. In all cases this thrombus is found to rest on the wall of the blood vessel, which on examination shows necrosis at the point of attachment. The thrombus in all probability is a later formation, dependent originally upon some injury to the lining of the vessel. If bacilli gain access to the thrombus its disintegration and necrosis follow, until it extends to the neighboring decidua. Staining with proper reagents will show the bacilli not only in the necrotic areas but in the thrombi. The failure to find giant cells and tubercles in decidual tissue can only be explained according to Runge, by the peculiar character of the decidual cells, although Warthen feels that this is insufficient as an explanation, and states that the decidual cells are really transformed stroma cells, and in their transformation have lost the power of responding to irritants. Microscopically the chief features of decidual tuberculosis are the characteristic thrombi which stand out in marked contrast to the thrombi of the placental sinuses. To a certain extent it will appear that the thrombi are primarily protected. Later, however, bacilli break through and necrosis extends into the surrounding tissues.

The second form of placental infection is that which has for its especial seat the intervillar spaces. Here tubercles are formed occupying the spaces between the villi, the formation of which would appear to be explained as follows: the syncytium, as it is called, the layer of epithelial cells which separates the fetal and maternal blood streams, sustains an injury at a certain point, which is followed by a necrosis or degeneration produced by the action of the tubercle bacilli fastening themselves on to the sur-

face of a villus. Leucocytes, red blood cells and blood plates from the maternal blood form a thrombus. Later this villus undergoes caseation. Microscopically sections show that in all cases the tubercular thrombi are attached to a villus at some point where the syncytium has either disappeared entirely or appears as a swollen, hyaline layer devoid of nuclei. In those cases where the syncytium is entirely absent the thrombus rests on the villus itself. Epithelioid cells and typical Langhans giant cells are found extending from the stroma of the villus into the thrombus.

The intravillous form of tubercular infection is that in which, as the name clearly indicates, tubercles are found within the villus itself. These tubercles vary from the single giant cells to epithelioid tubercles involving the villus in whole or in part. Caseous foci are frequently found. The especially interesting feature of this particular form of infection lies in the fact that in many cases the syncytium shows no sign of degeneration. This would appear to establish the fact that the tubercle bacilli can and do pass through the syncytium without causing it any damage. The absence of thrombi on the surface of the syncytium is *prima facie* evidence that it is not involved. How have the tubercle bacilli reached the interior of the villus? One of two explanations must be correct. If they have not penetrated the syncytium without harm or injury or perceptible mark they must have gained access by some retrograde metastasis from some other lesion involving the chorionic vessels and setting free in the fetal circulation the tubercle bacilli. This is one of the rarer forms of infection, as is also the fourth variety, which is an involvement of the vessels of the chorion, and therefore termed the intravascular chorionic. Here attached to the intima of some of the larger chorionic vessels were certain areas which showed necrosis with tubercle bacilli. The tubercle and its origin were found to spring from the vessel wall. In the fifth and last division of the subject the amnion shows an involvement through the chorion. This is usually characterized by thickening, infiltration by lymphocytes and beginning caseation with the usual tubercle bacilli.

Wollstein, in the case reported by her in *Archives of Pediatrics* for May, 1895, sums up the pathology as follows: We may assume that the basal decidua was first affected, the tubercle

bacilli travelling from the decidual sinuses to the covering of the villus, localizing there and forming thrombi in the adjacent intervillous spaces with destruction of syncytium, entering the villus stroma and finally reaching the chorion. In this case the child lived 19 days and the tubercles were in the early stage of formation, from which it is argued that infection was comparatively late in pregnancy. Warthen summarizes his conclusions briefly as follows: I. In all forms the primary lesion is a necrosis of the cells at the point of bacillary growth, either upon the syncytium or endothelium, or in the decidua or stroma of the villi.

Lesions of syncytium or endothelium lead to the formation of hyaline or agglutination thrombi. These may become converted into tubercles through an epithelioid proliferation of neighboring fixed cells and the tubercles so formed become caseous.

Decidual tuberculosis is characterized by necrosis of the decidual tissue and thrombosis of the sinuses without the formation of giant or epithelioid cells. Tubercles are not formed from the decidual cells.

The syncytium of the chorionic villi is no more immune to the action of tubercle bacilli than is the vascular endothelium in any part of the body.

There is some ground for the belief that tubercle bacilli may pass through the syncytium without causing injury to it.

The evidence afforded is against the formation of giant cells from lymphocytes, endothelium or syncytium, but is in favor of their origin from connective tissue cells.

In a consideration of the pathologic findings of placental tuberculosis it is obvious that a chief part is played by the syncytium. Up to a short time ago the view was entertained by many that this structure served as a barrier and filter, keeping within the placenta certain toxins of placental origin and in turn acting as a barrier against the invasion of bacteria from the maternal circulation. Recent studies, however, have materially modified this view. That pathogenic germs can and do pass from the maternal blood through the syncytial layer is clearly shown in the microscopic findings in the cases quoted above, while evidence is now forthcoming tending to prove that in certain cases, notably the toxemia of pregnancy, commonly called eclampsia, it is due to a leakage of the syncytial cells that the fetal toxins escape from the placenta and find their way into the maternal circulation.

The latest and most complete paper on the syncytium, its physiology and pathology, is contained in the *Journal of the American Medical Association* for September 28, 1907. The syncytium is described as one of the epithelial layers of the chorionic villi and is of fetal origin ; its functions are to act as a gland and filter, a carrier of nourishment, the channel for placental secretion, acts as enzymes and as a true blood gland. So long as it is normal and healthy and able to perform its functions there is no disturbance, but when it becomes a seat of disease, as it has been abundantly proved it can be, there ensues a train of disorders which can be directly traced to it. Among these are eclampsia, hydatidiform mole, syncytioma malignum and various neoplasms which are supposed to have embryonal tissue as a basis and are syncytial in their origin. The syncytium does not safeguard the placenta and fetus from tubercle bacilli and bacteria when the invasion is strong enough either as regards numbers or length of time, when for any reason the syncytial wall is not equal to its task. It is interesting to note in this connection that the placenta in the later months of pregnancy in normal conditions presents evidences of what may be termed senile decay. From early in its formation the chorion shows progressive atrophy and growth. Anemic infarcts are formed, and through these weak spots the bacilli might pass. As pregnancy advances the placenta shows signs of age with many damaged and broken areas through which, in all probability, bacteria effect their passage. Tubercle bacilli, once free and liberated in the maternal bloodstream, the syncytium damaged, it would seem as if conditions were favorable for placental infection, since the blood in the maternal and fetal streams is under normal conditions abnormally sluggish. Given, then, a tubercle infection, localized early in pregnancy, a slow current in the maternal sinuses, a senile degeneration of the syncytial wall later, and the conditions are favorable for a placental invasion.

How far is placental tuberculosis responsible for tuberculosis of infancy and childhood? The question is a difficult one to answer and at present cannot be answered satisfactorily. There are, however, several well-known facts which challenge our attention. Tuberculosis is conceded to be a disease widespread in its ravages, it even being claimed for it on the highest authority that one-seventh of all deaths are due to it. Among its victims must be many mothers and child-bearing women. Its known

mortality among infants and children is great. The high death rate among children in the first twelve months after birth shows that the survival of the fittest is unquestionably the law of nature early in life. Deducting from our mortality tables such cases as may be properly included under the headings of well-defined disease, and further deducting such cases as perish from bad midwifery, there still remains a good proportion, after which the only proper designation is the interrogation point. Are not some of these cases tubercular, and of those which are conceded to be such, are they all to be set down as cases which owe their origin to external sources? Do all the tubercle bacilli gain access to the infant's body through the alimentary canal or the respiratory organs? I do not think they do. In any event, to ignore the possibility of intrauterine infection is like the military commander who spends all his resources in defending two roads to his fortress and forgets the third.

Dr. Hickling felt sure that all had appreciated the able and interesting paper. A problem of great interest had been presented, and from the facts brought out by Dr. Morse many elements of the question are yet unsolved. It was at one time accepted without question that the direct transmission of tuberculosis through the placenta was possible and usual. In Dr. Hickling's own practice he had found two cases in which the placenta appeared to be studded with miliary tubercles; the appearance was not verified by the microscope. In one case, the mother was in an advanced stage of tuberculosis when the child was born, but this child has since been in excellent health. In the other case, the mother was not actively tubercular; her child has also grown up to be healthy. He has had the impression that the placenta acts as a filter, and he would think that children would be infected through the stomach and lungs rather than through the placenta. He inquired as to the longevity of the children among the cases referred to by Dr. Morse.

Dr. A. F. A. King thanked Dr. Morse for the presentation of a difficult and abstruse subject; few of us are familiar with it. Dr. Morse in his search of the literature had found only a few cases. It is also interesting to know how other infections pass through the placenta to the child. It is remarkable how the mother may be infected and the child escape. Dr. King mentioned the remarkable case in which the mother, herself well, gave birth to twins, one well, the other with a well-defined eruption of smallpox. He recalled the interesting suggestion that possibly the immunity of some individuals against certain infections might have been acquired *in utero*.

Dr. Isabel Haslup-Lamb suggested that the immunity acquired in this way does not always last through life, as she had seen a child born with measles, who subsequently had two other attacks of the disease.

Dr. D. S. Lamb said that tuberculosis of the placenta must be put down as exceedingly rare. Very many placentas have been examined since the first case was reported, and much work in this line has been done at the Army Medical Museum, with the result that very few tubercular placentas have been found. It would seem, therefore, that the placenta is not likely to take on infection.

Dr. Wood said that the paper opened up a medical question that might be to the interest of women. We so often see women with portions of the placenta left in the uterus and all the disagreeable and dangerous symptoms that may be occasioned by this accident; now all this might be prevented and many cases of tubercle of the placenta and other interesting conditions might be discovered by the routine systematic examination of the placenta in every case of childbirth.

Dr. Morse had nothing to add to the discussion. He replied to Dr. Hickling's inquiry as to the longevity of the children in the cases mentioned in his paper, that they all died.

CASE OF SARCOMA OF CEREBELLUM.*

By R. S. LAMB, M. D.,

Washington, D. C.

Sarah W., colored, age 7 years, 11 months and 3 days, was first seen by me at the Episcopal Eye, Ear and Throat Hospital, June 15, 1907, complaining that she could not see. She was well nourished; pulse and respiration normal; she could not stand on her feet, because of dizziness and loss of control of leg muscles; said she was constipated. Mind clear, and answered to questions intelligently. The eyes had searching movements.

Ophthalmoscopic examination showed double-choked discs, a typical picture, marked haziness of the retina, with edema and great engorgement of the retinal vessels. Nerve head swollen four diopters. Because of these symptoms and similarity to previous cases, a diagnosis of tumor of the brain was made; probably a

*Reported to the Medical Society, October 30, 1907.

sarcoma of the cerebellum, making pressure on the occipital lobes, or possibly involving them.

She was given magnesia sulphate, and then increasing doses of iodides, three times daily, at frequent intervals. Several days afterwards she could see light, and count her fingers at one foot distance. Her parents insisted on removing her to her home, and she was allowed to go June 21. Nothing more was heard about her until July 3, when she died, and her father called at my office to ask me to sign her death certificate, which I refused to do without having a post mortem examination and knowing positively the cause of death.

The post mortem examination was made on the evening of her death. The weather was warm and the environment not favorable; therefore the examination was limited to the head. Drs. D. S. Lamb, R. S. Lamb, W. L. Robins and E. L. Morgan were present. The body was fairly nourished. Decomposition had begun. The skull was normal. Some post mortem softening of brain. Large tumor of cerebellum that microscopically showed spindle-celled sarcoma. Scalp very vascular.

Dr. E. L. Morgan had seen this case before the appearance of eye symptoms. While the patient was in his care she had nausea, vomiting, slight fever, and neuralgic pain in the side of the head. The pain was not constant; there was nothing to indicate cerebellar trouble. She improved enough to walk about the house, when a relapse occurred and she was sent to the hospital with convulsions and sudden loss of vision. The diagnosis of intracranial tumor was made at the hospital and was confirmed at autopsy.

DR. JAMES CARROLL, MAJOR AND SURGEON, U. S. A.

Dr. James Carroll, a member by invitation of this Society, after a protracted illness, which he bore with unusual patience and fortitude, died on the sixteenth day of September, 1907.

It becomes the duty and pleasure of this Society to place on record its ardent appreciation of the important work accomplished by Doctor Carroll in his distinguished professional career, particularly with regard to the experiments by which he helped to demonstrate the etiology of yellow fever and the method of

its prevention by protecting the human body from inoculation by infected mosquitoes. The value and importance of his original research and of the experiment upon his own person with a dangerous infection have won for him the grateful approbation of the medical profession and of the world.

The life of Dr. Carroll is especially commendable and eminently worthy of imitation in that it illustrates the result of honest and earnest individual effort, guided by a normal ambition and a faithful adherence to ethical principles of the highest order. He rose by his own energies and was preëminently a *self-made man*. From a so-called common soldier in the ranks, he became successively a corporal, a sergeant, a lieutenant, and finally was rewarded by a grateful Nation with the rank of major. His medical career began as a hospital steward; later he became a medical student, and after graduation attained the rank of Surgeon in the United States Army. It was not long before he reached the dignity of a professor in the Army Medical School and in the Medical Faculty of the George Washington University in the National Capital. He has made for himself an imperishable record on the pages of medical history.

Reed, Carroll and Lazear, a trio who sacrificed their lives that their fellow man might escape one of the greatest scourges of the human race! Their names and their work will always be the pride of the medical profession.

We greatly deplore Carroll's loss; we honor his memory; and we heartily sympathize with his sorrowing family.

Resolved, That this testimonial be embodied in the records of the Society, and that a copy be forwarded to his family, with our sincere condolence and sympathy.

(Signed) Samuel S. Adams, M. D.,
A. F. A. King, M. D.,
H. T. A. Lemon, M. D.,
Committee.

Adopted by the Society, Oct. 16, 1907.

The Editorial Committee is prepared to publish abstracts of the proceedings of the other medical societies of the District. If these abstracts are typewritten, it will very much lessen the labors of the Committee.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, October 2, 1907.—Dr. D. K. Shute, President, in the chair; about 60 members present.

The following applicants were elected active members:

W. O. Owen, University of Virginia, ... 1878
Dorsey M. McPherson, Columbian University, ... 1884
Glenn I. Jones, George Washington University, . . . 1905
D. G. P. Bailey, National Medical College, ... 1896
E. Corey Starr, Howard University, ... 1904
Michael J. Ready, Georgetown University, ... 1905
H. H. Kerr, McGill University, Montreal, ... 1904
Seth Eastman Moore, University of Pennsylvania, . . 1898
William E. Rogers, Georgetown University, ... 1904
Charles L. Billard, University of Pennsylvania, . . . 1904
John Allan Talbott, George Washington University, . . 1904

Capt. Fred'k F. Russell, Asst. Surgeon, U. S. A., Curator of the Army Medical Museum, and Dr. Edwin R. Hodge, U. S. Army Chemist, were elected members by invitation.

Dr. E. L. Morgan, from the committee, reported the following resolutions upon the death of Dr. Jno. S. McLain, which were adopted.

WHEREAS, the Almighty, by whose fiat all things were created, has, in His infinite wisdom, removed from our midst our able and esteemed professional brother, Dr. John S. McLain; and

WHEREAS, the intimate relation he held with the members of the Medical Society of the District of Columbia only increases our heartfelt regret that a life of such usefulness should be cut short by the will of God, who knows what is best for man's material and future interest;

Resolved, That the sudden removal of our deceased friend to "the undiscover'd country from whose bourne no traveler returns," creates a vacancy in the family circle of our profession. He held the esteem of the members of our Society, holding many useful and important positions in our midst. He was sincere in all his views, took a decided stand in what he believed to be right and his duty to be done.

Resolved, With bowed heads, in grief, we extend as a society, our heartfelt sympathy to his sorrowing family and many friends, in a hope that some day we all may meet in that brighter land above. Peace be unto thy ashes, departed friend and professional brother. As a society, we lay on thee rosemary remembrance.

Dr. McLain was born August 9, 1848, in this city. He studied medicine at the Columbian Medical College and graduated

there in 1871. He practiced here three years and was House Surgeon at Providence Hospital in 1873. In 1874 he was appointed Acting Assistant Surgeon, U. S. Army, and served as such till Nov. 18, 1883, in New Mexico, Colorado and Texas, in various Indian campaigns and in the yellow fever epidemic of 1881. He afterward practiced in this city ; was a member of the Board of Medical Examiners and Medical Supervisors of this District, and of the Medical Association and Therapeutic Society. A full statement of his military medical service was published in Stone's *Biography of Physicians and Surgeons*, 1894, page 308. He died June 2, 1907.

The Chair appointed a committee on resolutions upon the death of Dr. James Carroll: Dr. S. S. Adams, Chairman, Drs. A. F. A. King and Lemon.

The Chair announced the death of Dr. A. Dunbar Forsythe, and appointed Drs. W. P. Carr, C. G. Stone and Howard Fisher, a committee to report resolutions.

Dr. C. W. Richardson read the essay for the evening: "The consideration of the operative treatment of deflections of the septum narium." Discussed by Drs. McKimmie, R. S. Lamb, Lemon, O. Wilkinson, Bermann, Bennett, and D. Olin Leech. See p. 333.

Wednesday, October 9.—Dr. Shute, President, in the chair; about 80 members present.

Dr. Carr, from the Committee, reported the following resolutions of respect to the memory of Dr. A. Dunbar Forsythe, which were adopted:

We have heard with deep regret of the death of our fellow member, Dr. A. Dunbar Forsythe.

Dr. Forsythe was of a modest and retiring nature, and consequently was not active as a member of this Society, but he was personally and favorably known to nearly all of us as a genial, sincere friend and a physician of fine ability. He was a kind and sympathetic friend of the poor, and will be sadly missed by many worthy families to whom for years he gave much of his time and his best talent.

His untimely death at the Georgetown Hospital, July 30, 1907, was a severe shock to his intimate friends and a grief to all who knew him. We, who knew his worth and high integrity, keenly feel his loss and extend our heartfelt sympathy to his family.

(Signed) W. P. Carr, *Chairman*,
C. G. Stone,
Howard Fisher,
Committee.

Dr. Magruder's resolution asking for a symposium on the subject of the City Water Supply was referred to the Public Health Committee.

Dr. Carr reported the following cases, with specimens:
1. Two unusual fractures; 2. Unusual stones from the kidney and urethra. Discussed by Drs. Lochboehler and Hickling. See pp. 342–344.

Dr. Hasbrouck reported a case of cyst of omentum, and presented the specimen. Discussed by Drs. I. S. Stone and D. S. Lamb. See p. 364.

Dr. J. Taber Johnson read the paper for the evening: "The gonococcus as a cause of sterility in both the male and female." Discussed by Drs. Hickling, Hagner, S. S. Adams, E. L. Morgan, Carr and Reyburn. See p. 345.

Wednesday, October 16.—Dr. Shute, President, in the chair; about 70 members present.

Dr. S. S. Adams, from the committee, reported resolutions upon the death of Dr. James Carroll, which were adopted. See p. 391. Copies of the resolutions were ordered to be given to the public press.

Dr. Reyburn spoke of the personal qualities of Dr. Carroll, and also of the destitute circumstances in which his family had been left. He urged upon the members to use any influence they might have with members of Congress to secure relief, and moved that the Legislative Committee be instructed to endeavor to secure legislation providing a suitable pension for Dr. Carroll's widow. The motion was adopted.

The resignation of Dr. E. C. Prentiss was accepted.

Dr. Pool reported a case of stenosis of the pylorus, with specimen. Discussed by Drs. Chappell, Carr and I. S. Stone. See p. 369.

Dr. Roy read the paper for the evening: "Functional disturbances of the nervous system due to gastro-enterogenous poisons." Discussed by Drs. Bishop, Lochboehler, Vincent, Carr, Randolph and J. D. Thomas. See p. 357.

Wednesday, October 23.—Dr. Shute, President, in the chair; about 45 members present.

Dr. D. S. Lamb, for Dr. Arthur, presented specimens from a case of amebic dysentery. Discussed by Drs. S. S. Adams and Heitmuller. See p. 354.

Dr. Reyburn read the paper for the evening: "Means of preventing death during anesthesia by chloroform and ether." Discussed by Drs. J. Ford Thompson, Vaughan, Hasbrouck, Mackall, Lewis and Kober. See p. 373.

Wednesday, October 30.—The President, Dr. Shute, in the chair; about 80 members present.

The resignation of Dr. C. Norman Howard was accepted, to take effect January 1, 1908.

Dr. R. S. Lamb reported a case of sarcoma of the cerebellum,

with specimen. Discussed by Drs. E. L. Morgan and Loring. See p. 390.

Dr. D. S. Lamb presented specimens from a case treated by the Viavi method. Discussed by Drs. Jas. Stuart, R. S. Lamb and Bovée. See p. 372.

Dr. Randolph presented a microscopic section of a placental tubercle.

Dr. Bovée presented a large *Ovarian Cyst*, with the following history of the case. Discussed by Drs. Keane, of Manchester, N. H., and J. Taber Johnson.

The specimen, a large, fibrous, multilocular, cystic tumor, was removed from a woman 35 years old, married five years, childless; at the time of her marriage she had noticed a small abdominal mass. Menstruation irregular, lasting three days. Recently had had severe pain in the region of the stomach, with hematemesis. The tumor extended from the pelvis to the ribs; there was a sulcus at the umbilicus; areas of fluctuation could be made out. The mass arose from the left ovary and pushed the uterus over to the right, with the right appendages under the uterus. The mass was free from adhesions; there was an ecchymotic spot near the point of contact with the stomach. In removing the tumor he had endeavored to avoid rupture of the capsule; a long incision was made and an attempt made to clamp the pedicle, but the latter was so wide that the woman collapsed from the pressure on the diaphragm when the attempt was made. The cyst was therefore incised and the fluid let out; the mass was then removed without trouble.

The interesting features were the shape, the nature of the growth, the pressure on the diaphragm, and the hematemesis, probably from pressure on the stomach.

Dr. Keane, of Manchester, N. H., expressed his pleasure at being present. He had examined this patient, at Dr. Bovée's request, and found the condition as described by the Doctor. Dr. Keane was present at the operation, which was most skillfully done. The anaesthetic was given by a native of New Hampshire; the young man was much exercised at the grave condition of the patient. The ecchymotic spot to be seen on the tumor had prompted an inquiry which elicited the information that the patient had recently vomited blood. Dr. Keane had seen several other patients with large abdominal tumors who had exhibited the same symptoms. He thanked the members of the Society for the opportunity of discussing the report.

Dr. J. Taber Johnson said the point made by Dr. Bovée with regard to making a large incision in order to keep the tumor intact was not well illustrated in this case, as collapse resulted from the attempt to remove the mass entire. He could see no benefit from such a procedure, except to avoid distribution of cancerous material. The operation may be well done by reducing the size of the mass by the use of a canula and removing it through a

small incision. Unless the history gives evidence of a cancerous tendency the short incision is best.

Dr. Bovée said that in describing the condition he had omitted to say that a large quantity of ascitic fluid had been found, as is common in such cases.

He preferred to make a long incision and to remove tumors such as this entire, in order to avoid the danger of spreading malignant cells. The length of the incision amounts to very little; with ordinary skill the closure should be rapid; no hernia results, there is no pain, there are no stitches to remove, and the long incision, therefore, is not contraindicated. There is danger of spreading cancer by rupture of these tumors, and when every precaution is taken nowadays to avoid just this accident, the same care must be exercised in removing masses such as the specimen presented.

Dr. Morse read the essay for the evening: "Tuberculosis of the placenta." Discussed by Drs. Hickling, A. F. A. King, Isabel Haslup-Lamb, D. S. Lamb and Wood. See p. 381.

WASHINGTON MEDICAL ANNALS.

Journal of the Medical Society of the District of Columbia.

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EDITORIAL COMMITTEE.

D. S. LAMB, A. M., M. D., *Chairman*, . 2114 Eighteenth Street, N. W.
MURRAY GALT MOTTER, A. M., M. D., . . . 1841 Summit Place.

Editorial.

SOME CONTRASTS IN MUNICIPAL HOUSEKEEPING.

Comment is frequently made upon the unsightly outskirts of so many of our towns and cities, marred as they are by "dumps" of ashes and refuse of all kinds and description. An American, travelling abroad and interested in these matters, is at once struck by the fact that such sights are rarely, if ever, met with in Germany, Switzerland, Holland, Belgium, Great Britain or even in Ireland. Perhaps one explanation of this is to be found in the saying that the waste of an average American household would keep an average Continental family in great comfort; certain it is

that these materials are put to much better use on the other side of the Atlantic.

Until recently, at least, Washington has enjoyed the reputation of being one of the cleanest cities, if not the cleanest city, in this country, but there are many cities on the other side which would put her to shame; even London, with its enormous street traffic and its grimy fogs, compares most favorably with our own National Capital, while Munich is almost immaculate. Here, the streets are not only sprinkled and swept during the day, but at night they are literally scrubbed. Two items, however, contribute to make this more easily practicable in Munich than in many other places: cheap labor and a practically unlimited supply of water at considerable head. Few American cities would, even if they could, employ women in their street-cleaning gangs. At work in the parks and especially among the flower beds they do not, perhaps, look so much out of place, but when pushing a heavy rubber "squeegee" over the asphalt pavements in the wee sma' hours of the morning, or tending switch at street railway junctions in the midst of the midday whirl, women do seem just a bit out of their element. Our back alleys and side streets, decorated with ash barrels and garbage cans in various stages of decrepitude and with their contents leaking all over the neighborhood, would make a native of any of the countries mentioned stare in astonishment—Ireland alone, perhaps, being excepted. While almost any English meat shop would make our Louisiana Avenue stands look like twenty-nine ("marked down" from thirty) cents!

Much as we may wish to improve our local milk supply, and much as we may deplore the Congressional myopia which has prevented our having a municipal bacteriologic laboratory, we may thank our stars and stripes that our children do not have to drink the lacteal fluid under a foreign flag. Most of the milk cans are fairly dazzling with their highly-burnished brass bands, handles and covers, but they are transported, as a rule, in uncovered, two-wheeled carts, and the motive power, whether canine, equine or human, cannot help but produce an inordinate amount of churning; while the method of dipping out the contents at each stop into smaller vessels, hung about the carts like bunches of grapes, and with dippers similarly disposed of *ad interim*, gives one visions of germs innumerable and possibilities unthinkable.—[M. G. M.]

MEDICAL SECTARIANISM.

The movement to abolish sectarianism in medicine, which has been marked by the revision of the Code of Ethics of the American Medical Association and the amalgamation of the two State associations in New York, is reaching out into the units of medical organization, the county societies. The Philadelphia County Medical Society has recently adopted a new by-law, defining the qualifications of members as follows:

"Active members must be graduates of at least one year's standing of a medical school legally empowered to confer the degree of Doctor of Medicine, must be legally authorized to practice medicine in the State of Pennsylvania and must have been residents for not less than one year of the County of Philadelphia;

Provided, (a) that all applicants for membership shall be required to state in writing that they do not accept any sectarian designation or base their practice on any exclusive dogma or system, and must satisfy the Censors that they possess the requisite scientific and technical education and qualifications."

The application for membership, after setting forth the usual data as to preliminary and professional education, license, registration and residence, concludes with the statement: "I do not accept any sectarian designation or base my practice on any exclusive dogma or system;" the application is then to be endorsed by three members of the society who are "personally acquainted" with the applicant. It is interesting to note that this action was taken by a vote of 119 to 20. Somewhat similar action was taken by the Allegheny (Pa.) County Society two years ago, as a result of which several graduates of homoeopathic schools have been admitted to membership, not as homoeopaths but as legal practitioners of good moral character and professional standing. It has been stated that of 1,200 graduates of homoeopathic colleges, in Pennsylvania, only six were genuine Hahnemannians. A very cursory examination of the catalogues of these institutions will show that they are using exactly the same text-books as are used in the so-called regular schools and, in some instances, at least, even in the disputed subject of therapeutics; moreover, it is well known that many of these brethren use opium, calomel, hypodermics, etc., which were to their illustrious patron saint *anathema maranatha*. Now if these gentlemen use the same tools that we do, and are legally, scientifically and professionally

qualified as we, and in addition are of good name and fame, would it not be well to invite them to unite with us? Much has already been done in perfecting the organization of the medical profession, we have never before been so strong as we are today, the best men of all schools have but one aim and object, which can be all the more easily attained by unanimity and harmony of action. And, here in Washington, particularly, the moral effect of a united appeal, when we go up to Congress for needed legislation, would be of untold benefit and force.—[M. G. M.]

PUBLICATIONS RECENTLY RECEIVED.

Report of the Origin and Prevalence of Typhoid Fever in the District of Columbia. By M. J. Rosenau, L. O. Lumsden and J. H. Kastle, of the Hygienic Laboratory (U. S. P. H. & M. H. S.), Washington, 1907. Bulletin No. 35.

The Perpetual Visiting and Pocket Reference Book. By J. H. Chambers & Co., St. Louis, Mo.

History of the Boston City Hospital, 1864–1904. Edited by a Committee of the Medical Staff. Boston, 1906.

A Medical Career and the Intellectual Life. By Casey A. Wood. Reprinted from *Bull. Amer. Acad. Med.*, August, 1907.

Sanitary Milk Production. Report of a Conference appointed by the Commissioners of the District of Columbia. Being Circular 114, Bureau Animal Industry, Dept. Agriculture. 1907.

Yellow Fever. By Joseph Goldberger. Bulletin No. 16, U. S. P. H. & M. H. S., 1907.

The Antiseptic and Germicidal Properties of Solutions of Formaldehyde and other Active Toxins. By J. F. Anderson. Being Bulletin 39, U. S. P. H. & M. H. S.

The Status Medicus, a Statement and Proposition. By James Krauss. Reprinted from *North Amer. Jour. Homoeopathy*, July, 1907.

The Movement Against Tuberculosis in Washington. By W. H. Baldwin. Reprinted from *Jour. of Outdoor Life*, Sept., 1907.

Modes of Statement of Causes of Death and Duration of Illness upon Certificates of Death. By the Bureau of the Census, 1907.

Anesthesia, Ancient and Modern. By Burroughs, Welcome & Co., London.

The Results of Radical Operations for the Cure of Cancer of the Breast. By W. S. Halsted. Reprinted from *Trans. Amer. Surg. Ass.*, 1907.

The Parathyroid Glandules, their Blood Supply, and their Preservation in Operations on the Thyroid Gland. By W. S. Halsted and H. M. Evans. Reprinted from *Annals of Surgery*, Oct., 1907.

Hypoparathyreosis, Status Parathyreoprivus, and Transplantation of the Parathyroid Glands. By W. S. Halsted. Reprinted from *Amer. Jour. Med. Sci.*, July, 1907.

Aural Vertigo and Menière's Syndrome. By W. A. Wells. Reprinted from *New York Med. Jour.*, Sept. 28, 1907.

The Significance of Vertigo Occurring in Connection with Diseases of the Ear. By W. A. Wells. Reprinted from *Interstate Med. Jour.*, XIV, No. 7, 1907.

The Johns Hopkins University Circular, Catalogue and Announcements for 1907–8, of the Medical Department.

Exchanges.

Albany Medical Annals.
American Gynecology.
Annals of Gynecology and Pediatry.
Buffalo Medical Journal.
California State Jour. Medicine.
Colorado Medicine.
Cronica Mexicana.
Illinois Medical Bulletin.
Journal Kansas Medical Society.
Journal Medical Society New Jersey.
Journal Michigan State Medical Society.
Journal Missouri State Med. Association.
Louisville Monthly Journal of Medicine and Surgery.
Maryland Medical Journal.
Modern Medicine.
New York State Jour. Medicine.
Northwest Medicine.
Pacific Medical Journal.

Proctologist.
Providence Medical Journal.
Surgery, Gynecology and Obstetrics.
Texas State Journal of Medicine.
Virginia Medical Semi-Monthly.
West Virginia Medical Journal

THE PRESIDENT'S HOMES COMMISSION.

A circular has been issued, addressed to physicians, under date of June 20, stating that "the 'Committee on Social Betterment' of 'The President's Homes Commission' believes that an investigation into the prevalence of certain diseases and morbid habits will prove a very useful medico-sociological study and possibly suggest important preventive measures. For this purpose, will you kindly cooperate with the Commission, which serves without pay, and furnish the desired information, for which full credit will be given you in our report to the President? It is respectfully suggested that the collection of your memoranda begin July 1, 1907, and end December 31, 1907, after which date kindly transmit the results of your observation to the undersigned." [Dr. Geo. M. Kober, 1600 T Street, N. W.]

Then follows a series of questions in regard to the prevalence of venereal diseases, the alcohol and drug habits and sexual hygiene. Any physician desiring a copy of the circular can obtain the same from Dr. Kober.

Manuscripts of Articles written by members of the Society, but not read at its meetings, have several times been offered to the Editorial Committee for publication. The Committee has felt compelled to decline publication until after such papers should be read before the Society, or unless the author was willing to pay for publication at the estimated rate, namely, $1.50 per page. Several papers have thus been published at the expense of the authors. Of course if the Society authorizes publication, without charge, of papers not read before it, the Committee will gladly obey instructions.

Photographs of the following members have been received since last report, making a total of 459 so far received :

Baier, G. K.
Bain, S. B.
Barbarin, F. S.
Barker, H. W.
Bartsch-Dunne, Anna
Bennett, A. B.
Bermann, I. S. L.
Bishop, F. B.
Bittinger, Chas,
Blake, L. M.
Bogan, S. W.
Boswell, A. W.
Brockenborough, Austin
Bryan, J. H.
Carmichael, R. B.
Clark, C. R.
Clark, W. E.
Cleary, Reuben
Cox, S. C.
Dove, J. M.
Draper, L. J.
Dulin, E. A.
Dunlop, John
Erving, E. L.
Erving, W. G.
von Ezdorf, R. H.
Ferguson, C. E.
Ford, C. M.
Fowler, W. C.
Gibbons, J. L.
Graham, N. F.
Hagner, D. R.
Hardin, B. L.
Harding, H. T.
Harrington, F. E.
Hodges, J. W.
Holland, J. H.
Hood, T. B.
Hughes, W. D.
Hurtt, Harry
Hynson, L. M.
Johnson, A. E.
Johnson, P. B.
Jung, F. A. R.
Jung, S. A. N.
Junghans, J. H.
Kelley, J. T.
Key, Sothoron
Lewis, S. E.
Littlepage, A. H.
McBlair, J. H.
McKimmie, O. A. M.
McPherson, D. M.
Magee, M. D.
Malone, W. P.
Marmion, W. V.
Marbury, C. C.
Marbury, Wm.
Mason, W. B.
Maury, T. F.
Moran, J. W.
Mullins, J. B.
Mundell, J. H.
Murphy, P. J.
Murray, T. M.
Neff, Wallace
Newell, W. S.
Parker, H. P.
Perkins, W. R.
Perry, G. N.
Pool, B. G.
Ray, A. M.
Reichelderfer, L. H.
Repetti, J. J.
Richards, Alfred
Richardson, J. J.
Riggles, J. L.
Russell, W. R.
Schaeffer, E. M.
Shoup, Jesse
Sothoron, J. T.
Squire, Susanna
Stone, T. R.
Thompson, E. D.
Thompson, M. F.
Trott, T. V.
Tyson, Samuel
Van Renssalaer, J.
Walker, R. R.
West, G. W.
Whitson, W. E.
Winter, E. C. C.
Young, W. G.

It is possible that one or more names have been omitted from the list. If so, please notify the Chairman, Dr. D. S. Lamb, 2114 18th St., N. W.

Reprints from the Annals containing an account of the dinner to Dr. J. Ford Thompson can be obtained from the printer, R. Beresford, 618 F Street, N. W., or from Dr. D. S. Lamb, at ten cents a copy.

The Medical Examiners of the Society.—The book kept by the Board of Medical Examiners up to 1869 is missing. If any member knows where it is, or is able to suggest where it is, the Historical Committee would be obliged to him for information.

The members elected in October last are requested to send to Dr. D. S. Lamb, Chairman of the Committee on History, 2114 18th St., N. W., the following personal information: Full name (as John Paul Jones); date and place of birth; year and institution from which any degree (A. B., M. D., &c.) has been received; service in Army, Navy or Marine Hospital Corps; and any other matter of civic or medical interest in their lives. It is also desired that the photographs of these new members be sent to the same address; such as are requested will be returned after being used.

A notice has been received of the publication of a new book, "Maternity," by a member of this Society, Dr. Henry B. Fry. It is intended as a book for the lay reader, the medical student and the trained nurse. The price is $1.50. For sale at "The Neale Publishing Co.," 431 11th St., N. W.

The Committee of One Hundred appointed by the American Association for the Advancement of Science, on Federal Regulation of Public Health, has addressed a circular letter to persons (authors) who are believed to be interested in this subject, asking cooperation. It is proposed to try to influence Congress to enact such laws as will better control the conditions of health and minimize the tendency to outbreaks of typhoid fever and other epidemic diseases, as well as tuberculosis, etc. The letter is signed by the Executive Secretary and dated at New Haven, Conn.

Medical Miscellany.

Conference on Medical Education.—A special meeting of the American Academy of Medicine will be held at Pittsburg, Penna., on Thursday and Friday, January 2 and 3, 1908, for the purpose of having, a full, free, frank and rounded discussion on the essentials of a medical education. According to the circular of information :

"The suggested Conference is to consider the problem of medical education for the college bred. To this end the effort will be made to determine the actual condition, formulate the problem, and attempt its solution. The so-called 'minimum requirements,' and the short courses to prepare students for the prospective advance in entrance requirements to the medical college, need not concern us, nor even the combined courses in an institution having an undergraduate and a medical department. We will seek for some plan where, by an economic disposal of time, the foundations of a broad culture can be given by the college, and the proper professional training by the medical college within a reasonable period and applicable to the unattached college and independent medical school."

For convenience of discussion the subject has been divided into two parts : I. The Medical Curriculum ; II. Preparing for Medicine ; and the following papers have been announced :

I.—A Criticism upon the Present Curriculum, by Henry Beates, M. D., President of the Medical Council of Pennsylvania.

The Essentials of a Medical Education, by Murray Galt Motter, A. M., M. D., of Washington, D. C., Secretary of the National Confederation of State Medical Examining and Licensing Boards.

The Danger of Attempting Too Much, by Frederick Henry Gerrish, M. D., LL. D., of Portland, Me., Professor of Surgery, Medical Department of Bowdoin College.

Also a paper, title not yet announced, by David Starr Jordan, LL. D., President of Leland Stanford, Jr., University.

For the second part of the programme, papers are announced by the Presidents of Allegheny College, Washington and Jefferson College and others. Those who desire to participate in this Conference should communicate with the Secretary of the American Academy of Medicine, Dr. Charles McIntire, 52 Norht 4th Street, Easton, Pa.

Therapeutic Society of the District of Columbia.—The monthly meetings of this Society were resumed October 12th, at the usual place, the College of Pharmacy, 9th and I streets, N. W.; the President, Henry A. Robbins, in the chair, and a good attendance. After the transaction of routine business, Dr. M. F. Thompson read the paper of the evening, "The Doctor and Alcohol," which was duly discussed. [We hope to publish the paper, at least in abstract.—Ed.] A. J. Hall.

Washington Society of Ophthalmologists and Otologists.—The first meeting of the season was held October 18, 1907, at the residence of Dr. Jesse Reeve, President Dr. D. K. Shute in the chair.

Dr. McKimmie reported that the woman with Menière's Disease, whose case he had described at a previous meeting, had recovered her hearing.

Dr. R. S. Lamb reported a case of *Parinaud's Disease* in a young woman, who had a typical high temperature, swollen preauricular and retromaxillary glands, and ulcerated follicles of the conjunctiva. The treatment was by applications of copper-sulphate crystal to the lid every other day and Basham's mixture internally. She recovered in three weeks.

Dr. Lamb also reported a case of chronic *dacryocystitis* with extirpation of the lacrymal sac. The woman had a cataract in the eye of the same side, that was almost mature.

Dr. C. W. Richardson read the paper of the evening, "*The Diagnosis of Adenoids.*" The lessons to be learned from the paper were: 1st, the need of anterior rhinoscopy for deflections of the septum that might give the same symptoms; 2d, the not rare occurrence of mistaken diagnosis due to carelessness, and 3d, the necessity of using some methods of precision, preferably the post-rhinoscopic mirror or the finger, and both when practicable. In the discussion, Dr. McKimmie said that a digital examination in each case should be made, because hypertrophy of the turbinate at its posterior extremity could be so easily discovered and the error of diagnosing it as an adenoid be avoided. An infiltrated membrane of the rhino-pharynx has so often been due to nasal obstruction and has so often been removed, because the normal folds are mistaken by the mirror for adenoids, that he deemed it absolutely necessary to use the finger. Dr. Bryan said that he would not operate without thorough examination; the facial expression was never sufficient. He would not, however, use the finger in a very nervous child. A person not familiar with the tactile sense might feel something else, and believing that he had a case of adenoids, might prepare to operate on it. Dr. Bennett said that he usually used both the mirror and the finger to make the diagnosis. One case that he examined seemed

to have a very large growth, but at the operation the adenoid was small; the reason of the difference lay in a rather low vault. He had found this condition usually in flatfaced children, and believed it to be the source of obstruction to breathing. Dr. Dye pleaded guilty to being the only one who made a snap diagnosis. One case that was sent to his clinic was diagnosed as adenoids by two reputable physicians; he looked at the facies, and thinking that it was typical had not examined further, but appointed a time for operation. Dr. Richardson was present at the operation, and while the child was under the anesthetic, passed his finger into the pharynx and found only an intumescent rhinitis. The child recovered in two weeks. Dr. Richardson, in closing the discussion, reported having seen a child with a fracture of the arm, who also was supposed to have adenoids; but on examination, although there was the typical appearance, with obstruction in breathing, the pharyngeal vault was smooth, and it was found that the obstruction was due to an anterior deflection of the septum to the left, which was so marked, however, as to press against the ala of that side and completely close the nasal fossa. He emphasized the importance of eliminating deflected septum.

Dr. Jesse Reeve read a paper reporting a case of *optic neuritis* from tubercular toxins. Recovery began after removal of a tubercular cervical gland. Dr. Bryan opened the discussion by stating that he did not see the relation between the cervical adenitis as reported and the papillitis. He failed to see how the toxins from the gland could affect both optic nerves. Dr. Newell spoke of tubercular uveitis; he had had a case, a man 28 years old, who had swollen lids for five or six weeks with ulceration of cornea occurring after removal of the tonsils; the cervical glands of both sides were enlarged. He used dionin and atropin for three weeks and then diagnosed an ulcer from mixed infection. He had recurrences off and on for 18 months and then called Dr. Wilmer in consultation; the diagnosis was confirmed. After seeing an article by Zeigler advocating the use of Mulford's tuberculin he used it, and after the reaction, violent inflammation with severe pain, the man was free from the trouble. General tuberculosis had not been demonstrated. Dr. McKimmie questioned whether the reaction was entirely due to the local and not the general condition. Dr. Fox said that he had seen a case of neuro-retinitis in typhoid which likely was due to toxins, and thought it possible that the case reported might have had a tubercular toxin origin. Dr. Shute had seen this patient with Dr. Burnett, and there was double choked disk; there was no general disease; he did not remember that the tonsils were affected. Sir Morell Mackenzie had reported a similar case in the *Journal of Ophthalmology*.—R. S. Lamb.

Medical Supervision of Schools in Sweden.—Toernell (*Medical Press and Circular*, London, Sept. 25) says that Sweden is to be regarded as a pioneer country in respect to the appointment of medical officers of schools. Mention is made of such officers as long ago as between 1830 and 1840, and their duties were prescribed by ordinance in 1863. The present code is dated Feb. 18, 1905. The duties are thus summarized :

I. To examine the pupils medically, in order to find out the state of health of each.

II. To adopt preventive measures against the spread of infectious complaints.

III. To superintend the school premises as regards their sanitary condition.

IV. To provide against the pupils being overburdened with lessons, &c., and thereby becoming overworked.

V. To attend indigent children, in case of illness, free of charge.

VI. To draw up statements on any problem that may arise regarding school hygiene, and to hand in periodical reports of the work that it has fallen to their lot to discharge.

The school medical officer is more than a mere adviser. He takes an active part in discussion and votes at the staff meeting on questions pertaining to the health of the pupils or the sanitary arrangements of the school. He has furthermore to do what in him lies to see that hygiene and sanitary regulations are duly carried out.—*Jour. Amer. Med. Ass.*, Oct. 26, 1907, page 1479.

The Monthly Meeting of **The Medical Society of Georgetown University** was held on Saturday, November 9th. Dr. Charles M. Hammett read a paper on "Albuminuric Retinitis," and Dr. Llewellyn Eliot a paper on "Ano-Rectal Fistula." Many members took part in the discussion. Dr. E. B. Behrend gave a demonstration in the College Laboratory, with the microscope.—L. Eliot.

In a recent circular issued by the **Bureau of the Census**, entitled "Modes of statement of cause of death and duration of illness upon certificates of death," there appears on page 55 a copy of the following statement on a certificate received at the Bureau : "The cause of death was as follows : Diphtheria, Antitoxin, Septicemia, Erythema, Urticaria, Dermatitis, Lymphangitis, Multiple dermal ulcer, Abscesses, Rheumatic fever, Hepatitis, Jaundice, Duodenitis ; duration 4½ months.

"Contributory : Nephritis, Pneumonia, Erysipelas, La Grippe, Cerebro-Spinal Meningitis, Peritonitis, Convulsions ; Death ; duration 96 hours."

In the foreign districts of large cities drug clerks are sometimes asked for queer things. These requests are particularly queer when they are sent in writing, and quite justify one drug-

gist in pasting them into a scrap book, which will be unique when finished, as the following notes copied from the original testify :

"I have a cute pain in my child's diagram. Please give my son something to release it."

"Dear Dochter ples gif bearer five sense worse of Auntie Toxyn for garle baby's throat and oblege"

"My little baby has eat up its father's parish plaster. Send an anecdote quick as possible by the inclosed girl"

"This child is my little girl. I send you five cents to buy two sit less powders for a groan up adult who is sike"

"You will please give the little boi five cents' worth of epicac for to throw up in a five months' old babe. N. B. The babe has a sore stummick"

"I haf a hot time in my insides and vich I would like it to be extinguished. What is good for to extinguish it? The inclosed money is the price of the extinguisher. Hurry please."—[From the Alumni report of the Philadelphia College of Pharmacy.]

At the recent Annual Meeting of the **American Pharmaceutical Association** the following resolutions were adopted :

Whereas, The American Medical Association, the American Pharmaceutical Association and the National Association of Retail Druggists, together with many State and local organizations and journals in both professions, have been for some years endeavoring to bring about a return to the practice of medicine based on the Pharmacopeia, and

Whereas, The medical colleges are represented on the Committee of Revision of the U. S. Pharmacopeia, and

Whereas, It is manifest to the thoughtful men both in medicine and pharmacy that a very large number of medical men might be better informed regarding the Pharmacopeia as a book of reference and standards. Be it therefore

Resolved, That it is the sense of the American Pharmaceutical Association, in convention assembled, that a great advance in the ethical practice of medicine and pharmacy will be made when the medical colleges make the Pharmacopeia a prescribed text-book or book of reference and require a familiarity with it in their examinations.

Resolved, That we request the governing authorities of all medical colleges in the United States to put into force such a ruling in their respective institutions as will insure in future classes a well-grounded knowledge of materia medica and pharmacognosy, as set forth in the Pharmacopeia.

Resolved, That the General Secretary be directed to transmit a copy of these resolutions to each medical college in the United States and to the medical and pharmaceutical press.

Medical Association of the District of Columbia.—At the stated meeting held October 1, 1907, the following candidates for membership were elected :

Joseph Alexander Murphy, George Washington University, 1905
Paul B. Johnson, Georgetown University, ... 1904
Nelson Du Val Brecht, George Washington University, . 1906
Prentiss Willson, Georgetown University, ... 1905
Richard L. Cook, University of Virginia, ... 1904
Virginius Dabney, University of Virginia, ... 1902
Tunis C. Quick, George Washington University, . . . 1895
Glenn Irving Jones, George Washington University, . . 1905
William Houston Littlepage, George Washington University, 1905
John Allen Talbott, George Washington University, . . 1905
Thomas Charles Martin, Cleveland College Physicians and Surgeons, 1894
William O. Owen, University of Virginia, ... 1878
J. Russell Verbrycke, Georgetown University, ... 1906
Chester C. Groff, Baltimore Medical College, ... 1905
Howard Hume, University of Virginia, ... 1905
Joseph James Kaveney, Georgetown University, . . . 1904
Samuel L. Owens, Georgetown University, ... 1903
William C. Rives, University of the City of New York, . 1877
Robert Y. Sullivan, Georgetown University, ... 1905
John James Wharton, George Washington University, . 1905
John Constas, Georgetown University, ... 1904
William G. Young, George Washington University, . . 1904

The resignations of Drs. R. S. Blackburn, Garden C. Stuart and E. C. Prentiss were accepted.

The President, Dr. Mackall, appointed the following committees : *Legislation*—Drs. J. D. Thomas, Adams, McLaughlin, Nichols, Hagner, G. Brown Miller, Louis A. Johnson. *Insurance* (proper fees for examiners)—Drs. A. B. Hooe, Van Rensselaer and D. O. Leech. *Medical Education*—Drs. D. K. Shute, Balloch and Wall.

Dr. G. N. Acker was elected delegate to the Legislative Council of the American Medical Association.

At an adjourned meeting of the Association, Nov. 12, Dr. S. S. Adams, Chairman of the Committee on Revision of the Regulations, reported amendments which would conform to the requirements of the American Medical Association in providing for the consideration of all questions relating to medical legislation and education, including the appointment of the necessary committees and for four stated meetings a year instead of two. These amendments will be considered at a special meeting to be held December 17.

L. H. Reichelderfer.

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THE PHILOSOPHICAL FOUNDATIONS OF CHARLATANRY IN MEDICINE.*

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It is not the object of this paper to endeavor to point out how the human race has gradually passed from those phases of intellectual development where it contemplated with craven fear the "signs and wonders" in the skies to the appreciation of the beauty and majesty of law in the heavens; or from the "Prince of the Power of the Air" to meteorology; or from magic and all of the black arts to physics and chemistry; or from the miracles of the Middle Ages to modern medicine; from fetichism to hygiene; from demoniacal possession to insanity; from diabolism to hysteria; or from legendary history and folklore to comparative mythology. In short, the object of this paper is not to epitomize the history or the evolution of modern medicine. Neither is it the object of this paper to indicate the history of the conflict of superstition with modern medicine, for we had a very interesting paper of this kind from Dr. James Dudley Morgan last December. Rather it is the object of this paper to attempt to indicate the reasons for the existence of so many aberrations in medical beliefs and medical practices on the part of the public at large.

All educated and experienced physicians are aware of the fact of the extensive prevalence of charlatanry throughout the history of human culture and at the present time; they also are aware of the fact that the patrons and dupes of what educated physicians call charlatanry are not confined to any class of men or

* Presidential Address, delivered December 18, 1907.

women. Men and women of the highest culture and refinement, as well as ignorant persons, are among the partisans and the disciples of many vagaries in medicine.

It has, therefore, seemed to the writer that it might prove interesting as well as instructive to devote some thirty or thirty-five minutes to an endeavor to seek out some of the underlying principles of successful charlatanry.

Probably quite a number of factors could be mentioned as helping to constitute the philosophical foundations of charlatanry in modern medicine. But at least five factors stand forth as elements of stupendous power in cultivating and maintaining such an extensive field of charlatanry as may be witnessed in any modern state, whether civilized, barbarian or savage. These factors are

(1.) Human suggestibility.

(2.) Reasoning by analogy in modern people.

(3.) Reversions to primitive methods of philosophizing (mostly analogical reasoning).

(4.) The assumption that ideal associations have corresponding material connections (mostly analogical reasoning).

(5.) Morbid imagination.

These five factors are easily reducible to three, viz: *suggestion*, *reasoning by analogy*, and *morbid imagination*.

We will devote only a few moments to the extensive, very important and fascinating topic of suggestion, because, under the form of psychotherapy, it belongs to legitimate medicine and should be familiar to every well-educated physician.

We will devote most of our time this evening to illustrating human reasoning by analogy among modern people and in primitive methods of philosophizing, since these topics are far removed from the ordinary lines of medical thought, and for that reason may be of greater interest to the members of the Society on an occasion of this character.

The concomitance of ideation and cerebration is a fact of overwhelming importance in the study of the mental activities of mankind. It thrusts itself upon the attention of the thoughtful psychologist and biologist.

It constitutes the scientific and philosophical basis of that factor of supreme importance in the beliefs and conduct of the human race, viz: of human suggestibility.

Suggestion and persuasion are practically identical in that they both inculcate ideas, the former appealing to blind faith, and the latter to logical, clear and critical reason. Bechterew has cleverly written that logical persuasion enters the understanding by knocking at the front door, while suggestion enters by the back stairs. Dubois has estimated that only three per cent. of the human race are free from the slavery of suggestion. He goes on to say that human suggestibility is incommensurable. It enters into every act of life, colors all our sensations with the most varied tints, leads our judgment astray and creates illusions in spite of our reasoning faculty. As soon as we leave the firm ground of mathematical reasoning we experience an incredible difficulty in resisting suggestion. When we form an opinion it is very rare that logic is the only cause. Esteem, affection, our secret desires and feelings, the charm of language, the tyranny of words, all mingle with the cold current of logic and lead us into error.

Ideas are so powerful that not only can they modify or distort a preexisting idea or sensation, but they can create sensations in their entirety. There are thousands of persons who, the moment they have read about or heard described a group of symptoms, immediately feel those symptoms. Certain persons experience a sensation of touching oil and the smell of petroleum in taking up a lamp which has never held any oil. The wine which is poured out of a dusky bottle bearing the label of a celebrated vineyard always seems better than it really is. The majority of persons feel various sensations in touching the pole of an electric apparatus when it furnishes neither currents nor discharges.

The credulity of the multitude finds its justification in human suggestibility. The suggestions of charlatans, whether verbal or in printed circulars, or in newspaper advertisements, constitute a very extensive and immensely fertile field for disseminating broadcast errors and superstitions in all matters pertaining to medicine. It was due to suggestion or psychotherapy that so many cures were made in the Middle Ages by pilgrimages to the tombs of saints, by holy waters, and by being in the presence, or by touching the relics, of saints. It is due to the overpowering sway of suggestion that so much is accomplished in modern times by christian science (a parody upon Christianity), by osteopathy, by patent medicines, and the like.

It is unnecessary in this paper to refer to the undoubted good that sometimes follows the administration of patent medicines that happen to contain appropriate medicines for particular diseases. It is unnecessary to refer also to the good that is accomplished by the element of massage that is present in osteopathy. It is also unnecessary in this paper to refer to the wanton and useless failures of osteopathy, christian science, and the like, for the purpose of this paper is to indicate the rational foundations of so much that is deplorable and so much that is absurd in the beliefs and actions of large numbers of persons, ignorant and educated alike, in affairs pertaining to the healing art.

It is sad to relate that physicians themselves are too often to blame for the undue sway of suggestion in medical affairs, and that charlatans and places of pilgrimage profit by the mistakes of physicians. Physicians too often declare that a disease is incurable. They make erroneous diagnoses or fail to accomplish any good, and too often forget the influence which the mind exercises over the functions of the viscera. They forget that when the desires of the sick and those who are suffering harmonize with the suggestions of charlatanry, then is a golden opportunity for wonder-workers of all kinds.

When, added to the above considerations, charlatans come in contact with invalids who have mental defects or a characteristic lack of logic, then does suggestion have all the firmer sway. When the mind is not critical and logical, or when, though critical and logical, it is not versed in at least the elements of medical knowledge and medical history; when it knows nothing of the history of charlatanry, and of the potency of suggestion; when, in addition to these factors, considerations of economy or parsimony are present, then, no matter how great the attainments of this mind may be in other fields of culture or human endeavor, this mind may at any time become the patron or the dupe of the grossest vagaries in medicine or charlatanry.

Now let us turn from human suggestibility to human reasoning by analogy. The clever Lord Chesterfield relates, in one of his charming letters, that the English King had been ill, and that people generally expected the illness to be fatal, because the oldest lion in the Tower, about the king's age, had just died. And then he exclaimed in his letter, by way of comment, "So wild and capricious is the human mind." But Tylor, in his fas-

cinating work on "Primitive Culture," says that the thought was neither wild nor capricious, but was simply such an argument from *analogy* as the educated world has at length painfully learned to be worthless; but which, it is not too much to declare, would to this day carry considerable weight to the minds of four-fifths of the human race.

On this principle it is easy to understand how the art of taking omens from meeting and seeing animals, and therefore how augury originated. It is perfectly clear why the omen of the vulture should mean rapacity; why flies, returning however often they are driven off, should be the signs of impudence and importunity, while bees, types of an obedient and industrious community, should be the omen of luck to a king. It is still plain to us why there should be a foreboding of ill from the owl's doleful note, and the suggestion of victory from the fierce swooping hawk, a thought which, in medieval Europe, made the bird of prey the warrior's omen of conquest.

The modern German peasant who says that meeting a flock of sheep is lucky, but a herd of swine unlucky, and the Cornish miner who turns aside in horror on meeting a rabbit or an old woman on his way to the pit's mouth, are illustrations of survivals in culture, and are to this day keeping up relics of primitive culture as genuine as any flint implement dug out of a tumulus. The art of taking omens from dreams is explained by the same principle.

Man, having learned to associate in thought those things which experience revealed as connected in fact, has often proceeded erroneously by reasoning from analogy to invert this process, and to assume that association of ideas must involve analogous associations in reality. In the hands of the trained and skilled observer and experimenter this process is invaluable and is called the scientific use of the imagination. It enabled Leverrier and Adams, independently, to predict the existence and the discovery of the planet Neptune before it was known to exist. But in the hands of any but rigidly trained thinkers, checked and balanced by rigid rules of evidence, the process leads to the wildest vagaries. This is not only true of man in his primitive culture, but also of men of the highest culture in the Middle Ages, and of many modern men, ignorant and educated alike.

By a vast mass of evidence from savage, barbaric and civilized

life, magic arts which have resulted from thus mistaking an ideal for a real connection may be clearly traced from the lower culture where they originate to the higher culture in which they are survivals. Such are the practices through which a distant person is to be affected by acting on something closely associated with him, as his property, clothes he has worn, and especially all cuttings of his nails and hair. Not only do savages, high and low, live in deadly terror of this witchcraft, but even European folklore preserves this primitive reasoning, and the modern German peasant, during the days intervening between his child's birth and baptism, is unwilling to lend anything out of his home, lest witchcraft should be worked through it on the unconsecrated baby.

When we hear of North American Indians making images of their foes, whose lives they expect to shorten by piercing these images with their arrows, we should remember that these savage people have their representatives among us moderns in the Devonshire peasant of England, who hangs in his chimney a pig's heart stuck all over with thornprickles, so that the heart of his enemy may likewise be pierced.

There is no better subject matter through which to trace the history of the laws of the mind and to study, therefore, the processes of the imagination and of analogical reasoning, than the well-marked incidents of mythical history; for these incidents range through every known period of civilization, and through all the physically varied tribes of mankind.

The rough nature-myths of savages are the expression of the lessons they have learned from their child-like contemplation of the universe. They are at once the science, the philosophy and the religion of primitive man. The anthropologist traces these rude nature-interpretations up into times when they were molded into complex systems of mythology, stiff and monstrous in Mexico, distorted into bombastic exaggeration in the Asia of Buddha, but gracefully artistic in classic Greece. He can observe how the mythology of ancient Greece and Rome, once so true to nature, came to be considered as allegory and was then degraded into sham history. Finally, in our modern civilization, we find that relics of the structures which were reared with such strength and skill by the primitive observers of nature, or the myth-makers, must now be sought in vulgar superstitions, in scraps of nursery folklore, in old dying legends, in fragments of old ideas

which still hold an inherited rank gained in past ages of intellectual history, and, finally, in thoughts and allusions carried on from ancient days by the perennial stream of poetry and romance.

The stupendous results that have been achieved by reasoning from analogy can be briefly though profitably illustrated by noting primitive man's mental attitude towards the striking phenomena of the heavens, chiefly in sunrise and sunset, cloud and storm, in meteors, comets and constellations, and the like.

We moderns pride ourselves upon our coldly prosaic and rational temper towards natural phenomena. We have come to believe that all events are taking place regularly in strict conformity to law. But primitive man knew nothing about physical forces, nothing about the laws of nature, nothing about the necessary regularity of things.

Where the activities of the human mind, whether primitive or modern, are not headed off and checked in various directions by established and rigid rules of experience, this same human mind can develop an unlimited capacity for believing and fancying. The fact that the ancient inhabitants of India regarded the rain clouds as cows with full udders milked by the winds of heaven, is not one whit less incomprehensible than many beliefs that have been entertained by many medieval and modern men.

The sole measure of things that primitive man possessed was himself; .consequently he made the natural deduction (based upon reasoning by analogy) that everything that moved or had power of movement, did so because it was alive. A personal will and life was attributed to night and day, to waterfall and whirlpool, and in a thousand different forms this conception was expressed. The thunder was the roar of a mighty beast; the lightning a serpent darting at its prey. The modern conception of the phenomena accompanying the revolution of the earth upon its axis in twenty-four hours, was explained by early man as the swallowing up and casting forth of Day by Night. Night was commonly personified as a huge wolf.

This scientific explanation of day and night by primitive man we now designate a myth, whether it has evolved, in the course of ages, into the legend of Tom Thumb, who was swallowed by the cow and came out unhurt, or the pretty story of little Red Riding Hood. This story is mutilated in the English version, but is known more perfectly by old wives in Germany, who can

tell that the lovely little maid in her shining red satin cloak was swallowed with her grandmother by the wolf, till they both came out safe and sound when the hunter cut open the sleeping beast.

The primitive man's conception of the ultimate victory of the personified Sun with his unerring rays over the demons of frost and snow in Winter, has given rise to the conception of infallible skill in archery, which underlies such a great variety of popular fairy tales. The story of William Tell is the last reflection of the beneficent divinity of Summer.

Again, throughout the whole of Indo-European mythology the souls of the dead are supposed to ride on the night-wind, with their howling dogs, gathering into their throng the souls of those just dying as they pass by their houses. Hence, when a person dies it is still customary, in many parts of Europe, to open the windows so that the soul may easily join the mystic cavalcade. The howling dog, whose appearance under the windows of a sick person is such an alarming portent to some persons, is but the modern echo of the wish-hound of Hermes, or, in other words, the tempest or howling wind personified as a great dog or wolf by early man. To this day, as the gale sweeps past their cottage doors the English peasants believe they hear the wail of the spirits of unbaptized children. In Persia and India, when a person is dying a dog is brought to the bedside in order that the departing soul may be sure of a prompt escort. In classic Greece we have the fleet greyhound of Hermes come to escort the soul to the river Styx.

So it is with so many popular stories such as that of Hercules, Odin, Cinderella, the Sleeping Beauty, etc.; they are the offspring of nature-myths, the result of primitive man's attempt to explain the phenomena of nature by reasoning from analogy.

Primitive man universally believed that the soul can temporarily quit the body during lifetime. It was the only way he could explain the phenomena of dreams.

Then away down the current of time, in the Middle Ages, the phenomena of catalepsy and trance were cited in proof of the theory that the soul can leave the body and afterwards return to it. Further, the intensely realistic mind of antiquity arrived at the notion that the souls of men could enter into the bodies of beasts, and also into inert objects, as stones, idols, pools, and the like.

These pagan theories, however, did not acquire their most horrible features until they came in contact with and were modified by the theology of the Middle Ages. Then witchcraft blossomed forth and continued even into our period of colonial history. A theory which, it has been estimated, resulted in the burning alive of nine millions of human beings.

One phase of it was the development of the dreadful theory, or, as we call it now, the superstition of werewolves; the superstition that with the aid of demons human beings could leave their material bodies reposing in sleep peacefully at home, while their souls were in the bodies of wolves preying upon cattle, children, women and men. This superstition, originated and intensified through reasoning by analogy, was apparently confirmed by many singular phenomena. It is known that in comparatively civilized countries, there have been cases of monstrous homicidal insanity. Going a step further, we find the propensity to murder has been accompanied by cannibalism. There have been a great many cases in which the homicidal and cannibal craving has been accompanied by hallucinations. Many of the insane cannibals described by Mr. Baring-Gould thoroughly believed themselves to have been transformed into wolves or other wild animals. Even in our own day the idea has not entirely died out of the French peasant's mind. A little over thirty years ago Mr. Baring-Gould was unable to persuade a peasant to guide him across a wild place after dark, because it was haunted by a werewolf. The theory of werewolves was the attempt of the cultured people of the Middle Ages to explain the obscure phenomena of insanity.

When, in those times, a person fell in a fit they shouted, "He's struck with a fairy dart," whereas we exclaim, "epilepsy."

Our modern word nightmare is the survival of a medieval theory of a female demon who sits upon one's bosom and hinders respiration. We moderns may say "indigestion," but they exclaimed "night demon," or Night Mare.

The relation of morbid imagination to myth, combined with crude reasoning by analogy, is illustrated not only in the terrible theory of werewolves, but in the well-known disease called by the English name of "shingles," from the Latin word *Cingulum*, a girdle. This well-known irritating herpetic disease tends to en-

circle the body as with a girdle. Tylor says that, by an imagination not difficult to understand, this disease is attributed to a sort of coiling snake; and that he remembered a case in Cornwall where a girl's family waited in great fear to see if the creature would stretch all around her, the belief being that if the snake's head and tail met, the patient would die.

That primitive philosophy of nature in which all forces objectively existing are conceived as identical with the force subjectively known as volition, is interestingly illustrated in the superstition that harm is sure to come to him who saves the life of a drowning man. This superstition is a survival in culture. In the older form of the belief it is held that the rescuer will sooner or later be drowned himself; and thereby we pass to the fetichistic interpretation of drowning as the seizing of the unfortunate person by the water-spirit, who is naturally angry at being deprived of his victim, and henceforth bears a special grudge against the bold mortal who has thus dared to frustrate him. Again, it is still believed by some venerable granny that it is wicked to kill robins. At an earlier date the superstition assumed the shape of a belief that the killing of a robin portended some calamity; in a still earlier form the calamity was specified as death; and again, still earlier, as death by lightning. Another step backward reveals that the dread sanctity of the robin was owing to the fact that he was the bird of Thor, the lightning god; and finally we reach that primitive stage of philosophizing in which the lightning was explained as a red bird dropping from its beak a worm with the power to cleave even rocks.

Centuries ago, the Portuguese in West Africa, noticing the veneration paid by the negroes to certain objects, such as plants, pebbles, idols, claws of beasts, etc., very fairly compared these objects to the talismans and amulets with which they were themselves familiar, and called them *feitico* (meaning a charm), whence we get our English word fetich. Fetichism was universal in the primeval world. These primitive philosophers, reasoning with reckless analogy, believed that all sorts of spirits could reside in these objects—the kindly, helping spirits of powerful ancestors, as well as those of enemies. They were exorcised or appealed to, therefore, in multitudes of ways.

Referring to fetiches, Pliny informs us how pains in the stom-

ach may be cured by transmitting the ailment from the patient's body into a puppy or duck, which will probably die of it. After the birth of a Chinese baby, its father's trousers, used as a fetich, are hung in the room upside down, so that all evil influences may enter into them instead of into the child. Modern folklore still cherishes such ideas. Although the terrible "black witchcraft" has died out from modern civilization, anthropologists may still study in the "white witchcraft" of modern European peasants the arts of curing a man's fever or headache by transferring it into a bird, or a crawfish, or of getting rid of ague or warts or gout by giving them to a willow, fir or ash tree with suitable charms. In England, warts may be touched each with a pebble, and the pebbles in a bag left on the road to church, to give up their ailments to the unlucky finder; in Germany a plaster from a sore may be left at a crossway to transfer the disease to a passer-by. In Thuringia it is considered that a string of rowanberries, a rag, or any small article, touched by a sick person and then hung on a bush beside some forest path, imparts the malady to any person who may touch this article in passing, and frees the sick person from the disease. It is stated on medical authority that the bunches of flowers which children offer to travelers in Southern Europe are sometimes intended for the ungracious purpose of sending some disease away from their homes.

Apart from the wretched selfishness and immorality of such practices, do they not help to furnish an insight into the human mind? Do they not prove, along with much that has been said in this paper, that there are inherited tendencies, and that there may be atavisms tucked away in the recesses of the average human mind, that may, under certain circumstances, render it susceptible to almost any kind of vagaries, and therefore to vagaries and charlatanry in medicine? The circumstances may be ignorance, wasting diseases that impair the better faculties of the mind, a poor mental inheritance, an unpropitious environment, or, as I have already intimated, reversions to primitive methods of philosophizing.

Can one detect any great difference between the personifications of the forces of nature by primitive men and the views of nature held by the most learned persons in the fifteenth, sixteenth and seventeenth centuries throughout Christendom? Catholics and Protestants alike believed that there was diabolical agency in

storms, pestilence, insanity, and in fact in all disease. Martin Luther supported the theory most zealously, frequently asserting his belief that the winds themselves were only good or evil spirits. Moreover, we find Luther deliberately asserting that a stone thrown into a certain pond in his native region would cause a dreadful storm because of the devils kept prisoners there. The childish remedies employed against diabolical agency in the air and against pestilence were exorcism, fetiches of various sorts, ringing of church bells, parades carrying saints' relics, etc.

But have we not with us in modern times large numbers of persons wearing "electric" belts and "magic" foot-pads in the same fetichistic frame of mind?

In our own time West Africa is still a world of fetiches. The traveller finds them on every path, at every ford, on every house-door; they hang as amulets around every man's neck, they guard against sickness or inflict it if neglected, they bring rain, they fill the sea with fishes willing to swim into the fisherman's net, they catch and punish thieves, they give their owner a bold heart and confound his enemies; there is nothing that the fetich cannot do or undo, if it be but the right fetich. On the theory of inherited fetichistic instincts the usefulness of the placebo in medicine and the success of patent medicines may be due at times to something other than the power of suggestion.

Thus the one-sided logic of the barbarian, based upon careless reasoning by analogy, making the most of all things that coincide with his primitive philosophy, and glossing over all that fails, has shaped a universal fetich-philosophy of the events of life. So strong is the pervading influence, that the European in Africa is apt to catch it from the negro, and himself, as the saying is, "become black." Thus, even to this day some traveller, watching a white companion asleep, may catch a glimpse of some claw or bone or such-like sorcerer's trash secretly fastened around his neck.

Modern European life shows well-marked traces of the ancient science and philosophy of spirits or mysterious influences inhabiting objects. The Tyrolese object to using grass for toothpicks because of the demons that may have taken up their abode in the straws. The Bulgarians hold it a great sin not to fumigate the flour when it is brought from the mill (particularly if the mill be kept by a Turk) in order to prevent the devil from enter-

ing into it. Amulets are still carried in the most civilized countries of the world by the ignorant and superstitious, with real savage faith in their mysterious virtues, and by some enlightened persons in what seems to be more than a quaint survival from the past. Certainly in all these persons who are found in modern life, and wherever found, we have the intellectual foundation for the reception and the encouragement of all sorts of aberrations in medical practice and medical belief. It is the writer's deliberate conviction that multitudes of worthless proprietary medicines and mechanisms, that are sold throughout the civilized world, would go out of existence were it not for the fetichistic taint that survives in so many persons' minds. The stupendous sales of so much worthless trash in the name of medicine cannot be accounted for on the grounds of mere ignorance. For where is education more generally diffused than in the United States? And where do quackery and charlatanry in medicine find a greater paradise?

Nor could the tremendous force of *suggestion*, as met with in the innumerable advertisements in newspapers and printed circulars, accomplish so much harm as they undoubtedly do, were it not for that bias in so many minds that has its foundation in the depths of primeval philosophy.

Let us glance for a moment at fetichism in high places and among the educated in medieval and modern times. You can go to the cathedral at Cologne, Germany, and observe the relics of saints there which are believed to have healing properties, or you can study the faith cures of Boston, or Old Orchard in this country. You can investigate the efficacy of the royal touch in sundry diseases, commencing with Edward the Confessor, in the eleventh century, and come down from reign to reign until you arrive at Charles I of England, who enjoyed the same power, in spite of the public declaration against its reality by Parliament. In one case this king saw a patient in the crowd, too far off to be touched, and simply said, "God bless thee and grant thee thy desire;" whereupon the blotches and humors disappeared from the patient's body and appeared in the bottle of medicine which he held in his hand; at least so said Dr. John Nicholas, Warden of Winchester College, England, who declared of his own knowledge that every word of it was true, which only goes to prove how easy it is to get some good and well-educated persons to be-

lieve in the most absurd fetiches and fictions in medicine—characteristics of the human mind which permit the charlatans to grow as the green bay tree. But Lord Bacon himself has said that "Imagination is next of kin to miracle—a working faith." So great fetichistic powers were attributed to King James II of England that we find a pauper at Portsmouth, New Hampshire, in colonial times, petitioning the General Assembly to enable him to make the voyage to England in order that he might be healed by the royal touch.

In conclusion, how can the public be safeguarded against evil suggestions in medicine, against reasoning by analogy about medical subjects in normal moderns, and against reversions to primitive methods of philosophizing when dealing with accidents and disease? The writer must confess that he sees no way whatever to prevent mental atavisms any more than physical ones. Reasoning by analogy can be curtailed, probably by education, especially an adequate education in the elements of the physical sciences, mathematics and logic. Several of the best remedies against the evils of suggestion are systematic attempts in the private and public schools and the colleges throughout the country to inculcate a spirit of rational skepticism, not only towards extravagant and irresponsible claims in medical affairs, especially in printed circulars, magazines and the religious and daily papers, but also towards extravagant and unverified claims in any field of knowledge or venture. Another important antidote to suggestion is a systematic series of public lectures in the schools and colleges by entertaining talkers giving an elementary presentation of the main features of the history of medicine, and especially of the history of charlatanry. Another most important aid is to uphold and encourage such papers as the *Ladies' Home Journal* and *Collier's Weekly*.

But the writer must confess that no matter how brilliant the conquests of medicine in the future may be, no matter how careful and considerate and well informed physicians may become, and no matter how much logic and mathematics and medical lectures are given to the public, the charlatans and their dupes, like the poor, will always be with us.

The works of reference used in the preparation of this article are as follows:

Dubois' Psychic Treatment of Nervous Diseases. Translated by Drs. S. E. Jelliffe and William A. White.
Myth and Myth-Makers. John Fiske.
Curious Myths of the Middle Ages. Baring-Gould.
A History of the Warfare of Science with Theology in Christendom. Andrew D. White.
Primitive Culture. Edward B. Tylor.
The Myths of the New World. Daniel G. Brinton.
The Childhood of the World. Edward Clodd.
The Birth and Growth of Myth. Edward Clodd.

CASE OF TYPHOID FEVER, WITH DIPHTHERIA, IN A CHILD.*

By S. S. ADAMS, A. M., M. D.,

Washington, D. C.

W. C., a 7-year-old colored boy, was admitted to the Children's Hospital, October 24, 1907.

He had been sent, through the Board of Charities, by Dr. Pyles, who had treated him for typhoid fever. No one accompanied him to give a history of the case, but his brother and sister are now in the hospital with typhoid fever, and we have learned that his mother also has it. After an examination, the diagnosis of typhoid fever was confirmed, and the Widal test was positive on the 30th, although it was negative on the 27th. He was given liquid nourishment, and the ice cap and sponge bath were used when necessary. From the date of admission to November 4, the temperature fluctuated between 103 and 105, with an average daily excursion of 1.5 to 2; the pulse and respiration rate were maintained.

Nov. 3, 6 P. M., intestinal hemorrhage—small quantity of dark red blood; and another at 10 P. M. Nov. 4, slight hemorrhage of dark blood at 12.30 A. M. and at 8.30 A. M. Nov. 5, slight hemorrhage at 8 A. M., followed by a small dark green stool a few hours later. The rectal temperature remained at about 100 during the 4th and 5th, but began to rise on the 6th, and reached the normal typhoidal range of 103.8 by 1 P. M. His condition was satisfactory until the 9th, when he complained

*Reported, with specimens, to the Medical Society, November 13, 1907.

of sore throat and developed a right suppurative otitis. No deposits in the throat.

Nov. 11. He coughed a great deal and was very hoarse. I was attracted by the harsh and difficult breathing. Examination showed that very little air was entering the lungs, particularly the left. The dyspnoea was marked. I believed there was laryngeal stenosis, so asked Dr. McKee to examine him, and, if there was anything like a membrane discovered, 3,000 antitoxin units were to be given. Late that afternoon Dr. McKee found a deposit, the antitoxin was given, and a culture sent to the Health Department. His condition never improved, and he died at 3 A. M., November 12th. Late that day the culture was reported as suspicious.

The post mortem examination showed the heart normal, lungs normal, whitish deposit in the larynx ; liver normal, gall bladder distended, typhoid ulcers in the intestine.

Dr. Jas. D. Morgan said it was doubtful what the child died of, certainly not of typhoid fever. The cause may have been edema of the larynx supervening upon a nephritis, which so frequently accompanies typhoid, the edema subsiding rapidly and not showing at the autopsy.

Dr. C. W. Richardson said that important points not reported were as to the kind of dyspnoea—was it accompanied by excursion of the larynx ? was there retraction of the thorax ? Certainly there was to be seen some deposit in the larynx exhibited ; a culture should have been taken from this at the autopsy.

Dr. S. S. Adams said that there had been no evidence of nephritis in the case, and Dr. McKee had reported no edema of the glottis. There was marked excursion of the larynx, with stridulous breathing ; there was no evidence of pulmonary edema. The larynx had been placed in strong alcohol at the time of autopsy, and no culture was possible. The membrane to be seen did not seem sufficient to cause death.

Higher Fees.—Thirty-four medical societies, with a membership of 2,657 members, embracing the Berlin region, have advanced the fees for private practice. This decision was officially voted at a general assembly of representatives of the various medical societies held in December, 1906.—*Jour. A. M. A.*

THE CAUTERIZATION OF PTERYGIUM.*

By F. B. LORING, M. D.,

Washington, D. C.

Nowhere, perhaps, does time count for so much as in minor surgery, and above all, in the minor surgery of the eye. A patient expects and is perhaps willing to give up his business or occupation for a serious injury, and he realizes that this must be done for a major operation ; but small matters, particularly when they are not accompanied by much pain or inconvenience, are generally postponed until they have become serious enough to demand relief ; and even then, the invariable question is, "How long will it take, and for what length of time shall I be forced to give up my work?"

This is particularly true of pterygium. As a rule, it does not occur in women, in whom the disfigurement would lead to early treatment—nor does it generally produce much discomfort until it has encroached upon the cornea, with a resultant loss of vision, so that these cases do not often find their way to a surgeon until the disease is far advanced and the treatment, under the old methods, offers quite a problem. For it must be remembered that the apex of the pterygium is not the boundary of the disturbance in the corneal elements, but that there is a patch of haziness beyond it, and that even when this is not apparent by examination, the structure of the cornea is apt to lose its homogeneousness, and may thus produce irregular refraction, as was demonstrated by the ophthalmometer by Noyes.

This accounts for those cases of impaired vision in which the growth has not yet encroached upon the pupillary area, and goes to show that it is not always safe to postpone operative interference because there is a band of seemingly clear tissue between the growth and the margin of the pupil. As a rule, however, the patient *has* postponed it, and we are confronted with an affected cornea and a mass of hypertrophied conjunctival and sub-conjunctival tissue the removal of which will leave a dense opacity of the cornea and a thick and tendinous cicatrix at its base, particularly when it is large and vascular.

To meet this condition many operations and modifications of

* Read before the Medical Society, November 13, 1907.

them have been in vogue, but they may be all classed under three heads, viz :

First. *Excision*, which consists in dissecting the apex from the cornea, with a pair of curved scissors or a cataract knife, and then, having freed the edges of the conjunctival portion, in excising it, at about a line or a line and a half from the limbus, the conjunctiva being then brought together by sutures. This was the usual operation as advocated by Arlt, and modified by Pagenstecher, who simply turned the excised portion back and, having brought the edges of the cut conjunctiva together with sutures, allowed the separated part to shrink and gradually disappear.

Second. *Transplantation*, which differs from the operation just described simply in the fact that the freed portion, instead of being excised, was inserted in a wound in the conjunctiva below the cornea, where it could not encroach on it. This was particularly applicable in those cases in which the pterygium was very large, and was first introduced by Desmarres, who detached the growth quite up to its base ; he then made an incision in the conjunctiva, parallel to the lower edge of the cornea, and retained it there by sutures. This was improved on by Knapp, the elder, who divided the body of the growth, after the excision of the corneal portion, by a horizontal incision, covering the wounds by square flaps of conjunctiva from the tissues above and below.

Third. *Ligature*, which consists of strangulation by sutures. This was introduced by Szokalski, who allowed the ligatures to remain in place for five days, and then cut out the atrophied portion. He claimed that the cure was permanent and that in no case had the difficulty recurred ; but the published reports from the operation have been meager, as the procedure does not seem to have been a popular one, probably from the length of time necessitated by the treatment.

In regard to the first two methods, the objections are bi-fold. In the first place, the stripping of the growth from the cornea, no matter how skilfully it is done, leaves a denuded spot, which extends during the process of repair beyond the original wound, and is seldom, if ever, completely absorbed. It must be remembered, too, that the disease itself is almost always one of adult life, and occurs in tissues that are already weakened and relaxed. In the second place, the bulk of the remaining conjunctival mass presents not only a most disfiguring appearance, but from its

shrinking into tendinous bands, often leads to a feeling of traction that impedes the motion of the eye, and gives rise to a general sense of discomfort; and in those cases in which the base was broad and the consequent loss of substance large, the cicatrix is, at times, dense and prominent, producing what is called "secondary pterygium," which, according to Soelberg Wells, sometimes requires a subsequent operation.

Added to these drawbacks, which relate more to the operator than to the patient, we still have the interest of the latter to consider, for on him falls the brunt of the trouble—the loss of time, the interference with business and the suffering and expense of a tedious convalescence. For, as these cases usually occur in persons of the middle classes, who are subjected to exposure and the vicissitudes of an outdoor life, it is often impossible for them to submit to any treatment that interferes with their occupation. Some little time ago the late Dr. A. Coe read a paper on a "new operation for pterygium," and presented a case before the Washington Ophthalmological Society. His method consisted in the direct application of the cautery to the apex of the pterygium on the cornea, leaving the rest of the body to take care of itself. The case presented had been operated on some months before, and the cautery had been applied three times, at intervals of a few days, the first application being made to the center of the apex and the two subsequent ones laterally. The instrument used was a platinum wire with a bulbous head of about the size of a small pea.

There was still a white opacity where the apex had rested on the cornea, but the tissues up to that point were clear and transparent, and the opacity itself was evidently much thinner than it had been, and there was a great reduction in the size and vascularity of the pterygium.

Since then I have used this method, to the exclusion of all others, in fifty-four cases, twenty-three of which I have already reported. These have been completely successful, and in one instance only, which was very large and vascular, with a central vessel of considerable size, which I ligated, has there been any necessity for anything but the application of the cautery, alone and unaided.

The operation is simplicity itself. All that is required is an alcohol lamp and a platinum wire. The latter I have changed

from a bulbous point to a hook of about three and a half millimeters in width and one in thickness, mounted on a wooden handle. After the eye is thoroughly under the influence of cocaine, I press the bottom of the convexity, heated to a white heat, against the point at which the apex protrudes above the surface of the cornea, on the pupillary side, and then elevating the handle, bring the rest of the platinum to bear, in a direction parallel to the axis of the pterygium, from the apex toward the base. One application of the cautery, if thoroughly done, is generally sufficient; and my habit has been, when it has been possible, to put the eye through a preliminary course of treatment with Pagenstecher's ointment of the yellow oxide of mercury, to reduce the vascularity and to decrease the size of the growth as far as possible before operating. This is again continued, a few days after the throwing off of the eschar, vaseline being substituted for the hydrated glycerole of starch as a menstruum, as it produces less pain and subsequent inflammation.

As to the etiology of the disease, it is hardly a point that enters into a description of an operation; yet I cannot help expressing the opinion, while the textbooks all agree that it is due to exposure, to a seafaring life, to the effects of dust, glare and external irritation, that at least heredity *does* exert an influence on its production. Of the fifty-four cases treated by me, several were brothers, one of whom only, had been exposed to the conditions supposed to be favorable to its production. One man stated to me that his father had suffered with it in both eyes, and on his second visit brought his son, a strumous lad of fourteen, who had passed his life in a child's hospital, entirely removed from any source of ocular irritation whatever. Not only was this the youngest case that I have heard of but it was the only one I have ever seen that was vertical, the base being immediately above the insertion of the superior rectus. His father stated that it had existed for some time, and there was no history of any preliminary attack of phlyctenular conjunctivitis or pinguecula.

Of course it is impossible to form statistics, or to "manufacture history" from such a limited number of cases as fifty-four, but small as the number is, it is large enough, I think, to have demonstrated the fact that there is no pain at the time of the application of the cautery, nor after it; that it is not followed by in-

flammatory reaction, that there are no sutures to be removed, nor wounds of a protracted nature to be healed; that the patient loses little or no time from his vocation; and, in short, that the operation has been removed from the domain of major surgery to one of the most minor operations of the eye.

Dr. Butler said that after the extensive resumé of the subject, little remained to be said. He had been very much interested in the paper. He had had little experience with the use of the cautery for this condition, and had had not very good results from its employment. After hearing of Dr. Loring's marked success with it, Dr. Butler will certainly try again. At present he prefers the transplantation operation. As to the etiology of the condition, there are two classes of observers, who hold different ideas: one class believes that pterygium is due to a chronic, enlarged pinguecula; the other that it is due to an ulcer or abrasion of the sclera, which becomes adherent to the cornea. As to the removal of pterygium, there are three modes of procedure: 1. Excision, which has been relegated to the past; 2. Cauterization, as described by Dr. Loring; 3. Transplantation, the best method yet devised. It leaves a clear interpalpebral space, can be done with little inconvenience to the patient, and leaves the eye with a good appearance.

It is important to remove pterygia early, before the point of attachment to the cornea becomes large.

Dr. Hammett was glad to have heard the paper; the subject was of a kind very advantageous to present; although regarded as a trivial affection, pterygium is as important from the operative standpoint as cataract. He has tried the cautery with little success; he prefers excision for the removal of pterygium.

Dr. R. S. Lamb had had very little experience with the cautery. He was glad to hear the paper and will give the method a trial. He has used the electric needle, but has secured no improvement of pterygium by its use. He has tried McReynolds' method and has found that the only objection to it is that an inflammatory reaction in the lower segment persists for two or three months. Dr. Lamb has gone back to simple excision and gets good results with few recurrences. He does not use any of the methods described in the books, but tears off the superficial layers of the cornea, never cutting this attachment of the pterygium. He believes that if Dr. Loring's method can accomplish for all operators what it has accomplished for Dr. Loring it should have a thorough trial. The objection to other operations is the tendency to remove too much tissue.

Dr. O. Wilkinson was much interested in the paper. As to the cautery he had been unable to get any such results from its use as those reported by the essayist, and had abandoned the opera-

tion. The objection to transplantation is that the disfigurement after operation discourages the patient. Dr. Wilkinson prefers the ordinary excision, and has concluded that if the patient is carefully watched very little irritation results. He believes that pterygium is due to long continued irritation, and if the irritation persists after operation there is no reason to doubt that there will be a recurrence. As many as 90 per cent. of the cases occur in rural districts, where neglect and irritation of the eyes are common. A neglected astigmatism may be productive of pterygium.

Dr. E. L. Morgan said that while in the Indian service he had encountered many cases of pterygium among the Indians; it is a common affection, and he has seen double pterygia—affecting both eyes, or two on the same eye. It is said to be due to the smoky lodges in which they live, snow blindness, etc. There was an old Indian woman who had the reputation of operating upon cataract, but he had no doubt that the condition for which she really operated was pterygium and not cataract.

Dr. Kober had also seen many cases of pterygium among the Indians; he thought that it must be due to the acrid smoke of the camp fires.

Dr. McKimmie took occasion to say a good word for excision, although it had been condemned by one of the speakers. He remembered very well when Dr. Coe originally advocated the cautery for the treatment of pterygium, but Dr. McKimmie never had had the courage to try it. Excision after the modified Alt method has been so uniformly satisfactory in his hands that he has tried no other.

Dr. Shute said that his experience confirmed Dr. Butler's, that McReynold's transplantation operation is the best. It results in a smooth surface, with very little visible scar, most of it being hid by the lower lid.

Dr. S. B. Muncaster had been using McReynolds' method since hearing his original description of it some years ago. He has never been disappointed in it.

Dr. R. S. Lamb said that McReynolds has recently stated that he still uses the operation which bears his name.

Dr. Loring said that the success of the cautery method depends upon the thoroughness with which it is done. His first cases did not do so well as later ones, after he had gained confidence. Many of his patients had been sailors; after burning the pterygium, they would go to sea the next day without the least inconvenience, and without an hour of time lost. As for the cosmetic effect, he would recommend the more elaborate methods; he had advocated the cautery for poor persons to whom the loss of time works hardship; and also as a method which may be employed by general practitioners.

SEXUAL DIFFERENCES IN THE SKULL AND OTHER PARTS OF THE SKELETON.*

By A. HRDLICKA, M. D.,

Washington, D. C.

Dr. Hrdlicka apologized for presenting so seemingly old a subject, but it was one of great importance in anthropology, and from a medico-legal standpoint. By the knowledge of the sexual differences in the skeleton, the examination in a favorable case of even a single bone may determine the sex of the individual from whom it came. Such means of identification would be of great importance, for instance, if after a fire bones should be recovered, the identity of which was in doubt; or after the disappearance of a person, a skeleton or the part of one should be found; or in bodies that lay long in water, etc.

The history of this study is, in fact, for the most part quite recent. Aristotle spoke of sexual differences to be observed in the coronal suture, but his observations have not been sustained. Practically nothing was done up to the end of the eighteenth century. In 1788 Ackermann published the first work of importance on sexual differences in the skeleton, and he established some distinguishing marks. Soemmering supplemented Ackermann's work. The present century has witnessed the greatest progress in this line of research, and among the principal workers have been Broca, Velcker, and Bartels, in Europe; Flower in England, and Dwight in the United States. In most of the present-day anatomical textbooks there will be found notes upon the sexual characters of bones, but these are not sufficient for all purposes.

The speaker proposed to give, with others, some of the distinguishing marks not so commonly known.

The two parts of the skeleton most important for sexual identification are the skull and the pelvis, although there are other bones with marked differences. The sex can be determined by the skull alone in at least 90 per cent. of the cases, when working with skulls of the whites; with the pelvis alone also in about 90 per cent. of the cases; with both skull and pelvis the proportion

*Read before the Medical Society, November 6, 1907.

of failures sinks to 2 per cent. or 3 per cent. With the addition of long bones and the scapula, sternum and vertebrae, mistakes are reduced to 1 or even less than 1 per cent.

Skull.

The characteristics to be spoken of apply to all races, and are as follows (in the line of their importance):

1. Supra-orbital ridges—prominent in males; slight in females. The same may be said of the glabella.

2. Mastoid processes—well developed in males; small in females. In males in most cases, if the skull (without the mandible) be placed upon its base, it will be found to rest upon the mastoid processes; in females it will rest upon the condyles. In communities in which the women work hard, and especially where they carry burdens upon the head, the mastoids in female skulls may be found quite well developed, though not really massive.

3. Size of the skull. The average male skull, in every direction, is larger than the average female skull. (Ratios were given). The female skull is also thinner.

4. Forehead. In males the prominence of the supra-orbital ridges and the glabella makes the forehead more or less sloping; in females it is more vertical.

5. Facial dimensions. In every facial measurement the average male skull is in excess of the average female.

6. Lower jaw. The male jaw as a whole is larger, heavier and more massive; the angle is expressive in jaws of the same race and age—the angle of the male mandible more nearly approaches the right angle than does the female jaw; this is best shown by a simple instrument, called the mandibular goniometer. The chin in the male is more prominent and broader; in the female both the chin and superior maxilla tend somewhat to terminate in a point.

7. Muscular ridges, occipital lines, inion. Ridges are more marked in the male, but are of secondary importance and are not to be considered alone. The inion is very rarely prominent in the female.

8. The base. In the female all the parts are more delicate; the foramen magnum is smaller. The styloid processes are thinner at the base in the female, and the vaginal processes are more delicate.

9. Palate and teeth. In the female the palate tends to an elliptical shape. The alveolar processes are stouter in males, and the teeth are larger. The relative (not absolute) width of the incisors is greater in females.

10. The sutures differ little ; no reliance can be placed in their sexual differences.

11. A feature very rare in female skulls is the sagittal crest ; occasionally present in male and dependent upon action of the temporal muscles.

12. A characteristic often to be relied upon is the smaller but longer nasal depression to be observed in females, due to lesser glabella.

13. An interesting feature in male skulls is the rather broad and stout outer half of the orbital border ; this will be found sharper in the female.

14. Prognathism is slightly more marked in females, a fact pointed out by Virchow. The malar bones and zygomatic arches are bulkier in males. There are numerous minor characteristics.

Pelvis.

1. Subpubic arch is wider in the female.

2. The pubic bones are broader in the female pelvis.

3. The ilia flare more in females.

4. The figure of the pelvic brim is more pointed towards the pubes in male pelves.

5. The ischiatic processes are occasionally more inverted in the male.

6. The sacrum differs markedly. It is possible to identify sex by the sacrum alone in many instances. The female sacrum is short and broad ; the male sacrum is more wedge-shaped.

Thorax.

If the thorax were found entire it would be characteristic ; in females it is more barrel-shaped ; in males it is flatter. In white females the thorax is apt to be somewhat constricted below, probably owing to corset wearing.

The scapula in the male has greater weight and massiveness than in the female ; in the latter the body of the bone is more translucent. The sternum differs in the two sexes. The clavicle, except in extreme cases, is uncertain.

The Long Bones.

These are important because they last longer than the softer and more cancellous bones. The size of the joints is larger in the male throughout; this difference is more marked in the heads of the femur and humerus. Sexual differences in the length of long bones are not so reliable.

The measurements of the long bones, ascertained from very many bones of the same race, may be expressed graphically by a curve, the ascending limb of which represents masculine measurements in diminishing certainty; the descending limb represents feminine measurements in increasing certainty; the apex represents measurements which may be either male or female, and which are "overlapping measurements." If only a portion of a long bone were found, its dimensions might identify it if they did not fall among the "overlapping measurements."

The ratio of the length of the long bones as compared with each other (*e. g.*, the humerus compared with the radius, humerus with femur, femur with tibia) differ in the two sexes. (Figures were given.)

There are also sexual characteristics to be seen in the calcaneum and the patella.

On the whole, very few cases will be met with in which an expert osteologist could not make the identification of sex; with all the bones at hand, in at least 99 per cent. of cases the identification can be safely made.

Dr. Hrdlicka closed the address with the warning never to rely upon any one single characteristic, unless it represents an extreme in sexual differentiation.

Dr. D. S. Lamb was glad to hear the subject presented in such a comprehensive way; we forget these important anatomical data so easily, it is well to bring them occasionally to our attention. The sternum may be mentioned as presenting sexual differences, being short and broad in the female. The clavicle is a difficult bone in which to detect differences. As to the flare of the ilia, recent statements of anatomists do not coincide with those made by Dr. Hrdlicka; this as a distinguishing feature has been brought into doubt. The masculine tendency is just as persistent in bones as in other things; even in families in which the woman works and the man rests, the sexual characters still remain.

Dr. Shute had been instructed by the entertaining address,

which had been most profitable to hear. He had been gratified at being present.

Dr. A. F. A. King had been much interested. When examining bones from an unknown individual it would seem to be necessary to have many other skeletons for comparison ; how could these conditions be met for practical purposes? Why are these differences called sexual? That term may be permissible for the pelvis ; but in other bones are not the differences due solely to differing degrees of muscular exertion? It is alleged that this is the reason that women in some countries are prone to develop masculine pelves, they bearing a large burden of the rough labor of the fields. As the manliness of the modern woman increases, the masculine characteristics will increase in the bones.

Dr. D. S. Lamb recalled the fact that in the famous Leutgert case in Chicago the trial turned upon the question whether bones found in a vat in a packing house were human or otherwise, and whether they were male or female. Dr. Dorsey testified that they were human female bones, while the defense held that they were something else.

Dr. Hrdlicka said that in attempting to identify bones the race should be known before identification is undertaken, and that all the signs presented by the bones must be taken together. Of course other skeletons must be at hand for comparison—the expert in any line must have the necessary physical as well as mental equipment for his work. As to the influence of muscularity, if a boy and a girl were selected, and the girl were trained in masculine ways, and the boy were kept from muscular exercise, while the girl's bones would be relatively well developed or over developed, still the boy's bones would preserve the hereditary masculine peculiarities.

Membership in Societies.—The value of medical societies, especially to the young physician, is immeasurable in many ways. How many medical colleges convey a knowledge of this fact to their students? Are there a dozen in the whole country? To the shame of the colleges, no ! Correct conduct as a physician in little things and big, toward his patients and toward his confrères, makes for happiness and success. Are there a dozen medical colleges in the country that appreciate this? No. "All that is necessary is that a man should be a gentleman" is the excuse, but this is not true. The medical code is broader than the social code.—*Jour. A. M. A.*

REVIEW OF INTERNAL MEDICINE.*

By W. W. WILKINSON, M. D.,

Washington, D. C.

In presenting to the Society a review of internal medicine I wish first to express my appreciation of the privilege accorded me. As careful a digest of the periodic literature as possible has been made. In so extensive a subject, and considering the vast number of contributions made to the profession, it will only be possible to briefly refer to those things given the most prominence and the acceptance of which seems warranted by apparently convincing clinical and experimental data. Surveying the field as a whole, while devoid of the spectacular, one can but be impressed with the earnestness of research in all branches, and experience a professional pride in the results achieved. Medicine is daily becoming more scientific, and while too frequently we are forced to say we do not know, and are lacking in specifics and etiological factors in the majority of diseases, vital processes are better understood and symptomatic treatment at least is more rationally carried out.

Disease to the internist is usually the manifestation of perversions of metabolism or infective agencies.

Deserving of our first consideration seems the present status of diet, nutrition and, allied with them, the physiology of digestion. The empirical principles of dietetic standards were settled centuries ago, and, as Hutchinson[1] says in a popular article, "there is little more room for difference of opinion about them than there is about the coaling of engines. Simply a matter of size of boiler and fire-box and the amount of work to be got out of the machine, multiplied by the time in which it is to be accomplished." Lusk says, "The basis of nutrition, whether in childhood or in the adult, in sickness or in convalescence, requires the administration of the proper amount of proteid and of energy-containing fats and carbohydrates, and the preparation of this food in palatable form."

Of late a dietary standard has been urged by Chittenden, consisting of the minimum supply of food necessary to maintain bodily and mental vigor, especially a reduction of its proteid

*Read before the Medical Society, December 4, 1907.

content, which he would reduce to one-half or one-third of the accepted standard. He also suggests that a greater use of proteid than this ideal standard might be the cause of many ills, such as gout, cancer and tuberculosis.

Such dietetic standard has met with but slight acceptance by the profession. Nitrogen starvation has long been recognized as a causative factor in disease, and particularly in tuberculosis where forced proteid feeding is practiced with almost a unanimity of opinion. That man can exist in apparent bodily health and vigor on a minimum proteid diet no one disputes; neither would anyone dispute, on the other hand, that his resistance is at the lowest level, and when infection comes he falls an easy victim. As Meltzer puts it, he possesses no "factor of safety." No one should fail to read Meltzer's recent Harvey Society lecture on the "Factors of Safety in Animal Structure and Animal Economy."[1½] It is a common-sense appeal for a return to earth from dietetic fads and theories, and a recognition of natural conditions. He compares the structure of the animal body with that of machines. He points out that these are constructed to withstand stresses in excess of those to which they are apt to be usually subjected; or, in other words, provided with factors of safety. Considering the body as a machine, subject to a variety of stresses, and like a machine accomplishing its work by a supply of energy derived from a supply of fuel, he demonstrates the presence of these factors in the various systems and functions of the body. In conclusion he says:

"The situation seems to me to be this: All organs of the body are built on the plan of superabundance of structures and energy. Of the supplies of energy to the animal we see that oxygen is luxuriously supplied. The supply of carbohydrates and fats is apparently large enough to keep up a steady luxurious surplus. For the supply of proteid we find in the actual conditions of life that man and beast, if they can afford, provide themselves with quantities which physiologic chemists call liberal. This may or may not be the quantity which Nature requires and approves. Experiments have shown that a number of men subsisted on half of such quantities. This latter might be an indispensable minimum, just as there is an indispensable minimum for all other luxuriously endowed provisions of the animal organism, and the liberal ingestion of proteid might be another instance of the principle of abundance ruling the structures and energies of the animal body. There is, however a theory that in

just this single instance the minimum is meant by Nature to be also the optimum. But it is a theory for the support of which there is not a single fact. On the contrary, some facts seem to indicate that Nature meant differently. Such facts are, for instance, the abundance of proteolytic enzymes in the digestive canal, and the great capacity of the canal for absorption of proteids. Such luxurious provision for digestion and absorption of proteids is fair evidence that Nature expects the organism to make liberal use of them. Then there is a fact that proteid material is stored away for use in emergencies, just as carbohydrates and fats are stored away. In starvation, nitrogenous products continue to be eliminated in the urine which, according to Folin, are derived from exogenous sources, that is, from ingested proteid and not from broken-down organ tissues.

"I therefore believe that with regard to the function of supply of tissue and energy by means of proteid food Nature meant it should be governed by the same principle of affluence which governs the entire construction of the animal for the safety of its life and the perpetuation of its species. It seems to me that the factors of safety have an important place in the process of natural selection. Those species which are provided with an abundance of useful structure and energy and are prepared to meet many emergencies are best fitted to survive in the struggle for existence."

The researches of Pawlow, Starling, Bayliss, Edkins, Dale and others, have somewhat revolutionized our knowledge of the physiology of digestion. New ferments have been discovered and the processes of secretion and absorption made clearer. It is impossible, in this brief paper, to go into details, and we will only briefly consider some of the salient points advanced.

Proteid has naturally received the greatest attention, first, by a study of the processes and products of digestion, and, second, by a more intimate knowledge of the chemical composition of the proteid molecule. This is now known to consist of numerous crystalline bodies, the amino-acids, and of these mainly or only, each kind of proteid possessing a numerical and graphic structure peculiar to itself. While complex in themselves, these are regarded as the end products of proteid fragmentation, and not albumose and peptone, as formerly taught. Both pepsin and trypsin have been shown to carry proteid beyond the peptone stage. It has been shown by Cohnheim that the intestinal mucous membrane produces a proteolytic ferment—Erepsin. As a result of the study of the action of these ferments on proteid, two

facts are given us: first, that proteid is fragmented beyond the peptone and albumose stage; and second, that the reconstruction of these foreign amino-acids into proteid homologous with the individual, takes place chiefly in the intestinal wall, and not in the body tissues in general. It is thought that practically all food is given to the blood ready for utilization by the body cells. Whether erepsin is the final fragmenting ferment and especially concerned in the reconstruction process, is not definitely settled. The old theory, then, of simple hydrolytic cleavage of proteid, with peptone and albumose as end products, their absorption into the blood as such, and their reconstruction into native proteid by the body cells, seems considerably modified.

It has also been shown that the stimulus to digestive activity depends not only upon nervous influence, but also upon chemical force. Pawlow first showed the secretion of the gastric juice to occur in two phases—primarily, under psychic influence; and, secondarily, he thought, by a local stimulation of the reflex nervous apparatus. Since the second secretion, which is the one that carries on the major portion of gastric digestion, was found to occur after cutting off the stomach from its connections with the central nervous system, it was thought that the cause was to be found in the gastric wall itself and to be of a chemical nature. To determine this, Edkins carried out a series of experiments, from which he concludes that the first product of digestion (the psychic juice) acts on the pyloric mucous membrane and produces in the mucous membrane a chemical substance, or hormone, which is absorbed into the blood and carried to the glands of the stomach, where it acts as a specific excitant to secretory activity. This gastric hormone has not been isolated. In support of Edkins' work, a process analogous to this has been shown by Bayliss and Starling to take place in the intestine. These observers have shown that when the acid chyme from the stomach comes in contact with the mucosa of the duodenum, a chemical substance—not a ferment—is produced which is absorbed by the blood, carried to the pancreas, and to some extent to the liver, and stimulates these organs to produce their respective secretions. They have named it Secretin.

So, beginning with the initial psychic secretion of the gastric juice, by successive hormone activity, the process of digestion proceeds to its completion in the intestine.

Application has been made of these new views to both etiology and treatment of disease. Edsall[2] and Wentworth[3] have advanced hypotheses that infantile atrophy is due to a disturbance of ferment and hormone activity, Edsall believing it to be the erepsin and Wentworth the secretin, which is at fault.

No doubt there are many clinical conditions with which we cannot at present correlate the present ideas. Based on the doctrine that secretin activates the secretion of the pancreatic juice and bile, one would expect severe nutritional changes following gastro-enterostomy, but reports from available literature seem to show that these are exceptional. Nutrition in achylia gastrica is difficult to comprehend, as many of these cases are apparently well nourished.

With the possibility that it may also influence the internal secretion, or glycolytic function of the pancreas, secretin has been used in diabetes mellitus, with results that, while so far disappointing, may ultimately be of some value.

The etiology of diabetes is still obscure. All observers seem to agree that the pancreas elaborates an internal secretion which bears a definite relation to carbohydrate metabolism. It has been supposed that this secretion is formed in the cell islets of Langerhans, such cells being regarded as a tissue distinct from the alveolar secreting tissue. Recently Dale and certain Russian observers have suggested that these islets but represent phases in the life history of the secreting alveoli and that they are formed from the latter as a result of secretory activity. Whether the pancreatic tissue in its islet stage has special connection with carbohydrate metabolism, or whether the glycolytic functions are carried out by the alveolar cells in addition to and at the same time as their ordinary secreting functions, Starling states we are not yet in position to say.

Cohnheim holds that ingested carbohydrates are burnt up in the muscles and that this action is activated by the internal secretion of the pancreas, which he believes closely allied in its characteristics to adrenalin, secretin, etc. Attention has also been called to the disturbance of fat metabolism in this disease, its incomplete oxidation giving rise to β-oxybutyric acid and its derivatives.

Attention has been especially called to the patient's weight, and no matter what the condition of the urine may be, as regards

the excretion of sugar, a patient is doing badly if his weight is progressively diminishing.

Recent anatomical and physiological researches upon the heart have done much to explain perversions of its function with reference to certain of its diseases and arhythmias. Gaskell first showed that contraction traveled from auricle to ventricle through muscular continuity. Later His discovered the auriculo-ventricular bundle of fibers. Purkinje described a network of peculiar gray fibers under the endocardium containing large nucleated cells in the bundles. Tawara has shown that these filaments of Purkinje are the terminal ramifications of the bundle of His, serving as a specialized musculature. Keith, in May, 1907, described his discovery of the "auriculo-ventricular" node in the situation of His's bundle and its continuity through an upper set of fibers with a similar node, the "sinus-auricular," situated at the junction of the superior vena cava with the auricle. This system is thought by Erlanger to supersede the moderator influence of the vagus, which is chiefly concerned in influencing the auricular rhythm. It is believed to control the normal one-fifth second interval between the auricular and ventricular systole, and the various forms of heart-block and arhythmia are now thought to be due to dissociated action of this mechanism, and their pathology to lie in the heart rather than in the medulla.

As an outcome of this study increased interest has been manifested in the use of mechanical aids towards graphic representation of the heart's action. Such instruments, we know, have never received extended use by clinicians, but methods which eliminate the personal equation in examination should strongly appeal to us. The polygraph, by which one may secure tracings of the heart's action in different places at the same time, has recently been introduced.

The taking of the blood pressure has now become almost as routine a measure as the temperature or pulse beat. A knowledge of it is essential in the treatment of cardio-vascular and renal diseases. Here the sense of touch is notoriously uncertain. With its first impulse only the systolic pressure was sought for, but recently improvements have been made with the object of differentiating between variations of pressure within the compass of a single beat—the systolic and diastolic. Klemperer[4] states that the normal amplitude (which he defines as the difference between

the systolic, or size of the pulse, and the diastolic, or tension of the pulse) may decrease from an aggravation of the clinical condition in aortic regurgitation, and also in the earlier stages of arteriosclerosis, while the blood pressure itself need not fall. Strassburger and Erlanger regard the amplitude as an expression of systolic volume.

Functional capacity of the heart has been much studied. The subject is well reviewed by Norris.[5] Its size is thought to be the best criterion in this respect. A good deal of attention has been directed to physical methods for determining the size of this organ. One prominent method is that of ortho-diagraphy, which is a complicated method involving the use of the x-ray, although very accurate results are claimed for it. Palpatory percussion, which is very simple, is yielding very satisfactory results.

The Nauheim treatment of heart diseases, consisting of baths and exercises, has been somewhat prominent in the literature. Interest in it was stimulated by the recent visit of Dr. Schott to this country. The subject is well reviewed by Kinnicutt.[6] The best reported results are in cases of enfeebled, relaxed, dilated hearts following prolonged and exhausting diseases, and in mitral insufficiency with dilatation. It is said to be of no use in aortic insufficiency.

Interest in arteriosclerosis has been largely centered in its etiology and treatment. Recent contributions somewhat invalidate its experimental production by adrenalin and other substances, as arteriosclerosis has been found in normal animals not subjected to experiment. Nothing new has been advanced in its treatment.

Osler[7] has called attention to the occurrence of angina pectoris as a premonitory and early symptom of aneurism. This is, according to Ewart, correlated with the well-known clinical fact of the painful nature of all arterial lesions, as embolism, thrombosis and ligation.

Interest in diseases of the blood has been principally centered in the so-called malignant conditions—pernicious anemia and leukemia. The more these diseases are studied, with particular reference to their classification, the more intricate do they become. Many cases of grave secondary anemia present the picture of the primary form, and have to be excluded. In the leukemias many anomalous cases are reported, complicating the present classification. For instance, a case is reported by

Ewald[8], which showed marked anemia, much enlarged spleen and no glandular enlargement. The blood showed no changes except a marked reduction in red cells and hemaglobin. Autopsy showed a typical anatomical picture of leukemia. Findlay[9] reports a case in a boy which showed 39 per cent. myelocytes and 35 per cent. large lymphocytes.

The etiology of both conditions is still obscure. Herter[10] has investigated the intestinal tract for a bacteriological cause of pernicious anemia, and his results seem to point to the occurrence of some cases from bacterial activity. Cures have been reported by colonic irrigation, which lends some support to his work.

Pernicious anemia is now divided by writers into two types—the plastic and the aplastic, based on the reactive powers on the part of the bone marrow to compensate for the destruction of red cells in the one, and its absence in the other. The plastic type is the ordinary form and is accompanied by distinct reaction, manifested by elements in the circulating blood recognized as being formed in the bone marrow—nucleated reds, myelocytes, etc.

In the aplastic type there is complete absence of medullary reaction and young cellular forms in the circulating blood. This absence is thought to be due to a degeneration of the elements in the bone marrow, or a failure to form them. The subject has been studied by Lavenson[11], who gives as the essential features of the aplastic type, a rapidly fatal course ; marked reduction in the number of red cells ; a greater proportionate reduction in the hemaglobin, with a low color index ; leucopenia with relative lymphocytosis ; absence of megaloblasts and usually normoblasts. The description of this type is of interest in two respects : first, in prognosis, being rapidly fatal, and, second, that a pernicious anemia may exist without the usual blood findings given in the textbooks.

In leukemia the interest has been principally centered in treatment by the x-ray. While probably none of the cases have been cured, good symptomatic results have been reported. The myeloid cases are the ones most benefited. Formerly this treatment was based on empirical grounds alone ; it was then shown that the x-ray had a selective action on the leucocytes, and recently

Capps and Smith[12] have demonstrated a lytic power in the serum of patients treated by the x-ray, the strength of which is proportional to the degree of clinical improvement of the patient. They found that injections of strong leucocytic serum into another individual with leukemia not under x-ray treatment, caused a decided and rapid fall in the number of leucocytes, the mononuclear cells being principally affected. With repeated injections a partial immunity to the serum was established.

We are still ignorant of the real nature and cause of cancer. Much experimental work has been done and is at present under way. The theories of Doyen, Beard and others recently brought before the profession, are discredited. Gaylord and Clowes[13] report 101 cases of spontaneous recovery from cancer in mice, and have collected 14 cases of authentic spontaneous recovery in man. The fact that spontaneous recovery may take place may serve to explain cases of reported cures under the various therapeutic measures advanced in the past.

The contributions in tuberculosis have been very numerous. The method of pulmonary infection in this disease still continues to be much discussed. The theory of the French school, headed by Calmette, as to its origin from the intestine, has been strenuously opposed. The Royal Commission of England, in its recent report, refutes the statement of Koch that human and bovine tuberculosis are different, and that human beings cannot be infected with the bovine bacillus. Our own Department of Agriculture, it is gratifying to record, decided this some time ago. Raw has recently stated that the bovine type occurs through the intestine and the human through the lungs. He thinks an antagonism exists between the two types of bacilli, and reports successes in treatment by using the opposing tuberculins.

Early diagnosis is recognized as of first importance, but new aids to it are lacking in the literature. Tuberculin as a diagnostic agent should bemore frequently employed.

In the matter of treatment, aside from diet and hygienic measures, the use of tuberculin is prominently before us; that is, its use in pulmonary cases. Like many other good things it suffered from over-exploitation and ignorance of usage in the beginning. There is now a conservative use of this agent, and gratifying results are reported by various writers. Sahli is an enthusiastic advocate of it. Trudeau[14] reports good results, most marked in

the advanced cases. He calls attention to the principal faults in the application of it, which are: beginning the treatment with too large an amount; raising the dose too rapidly and at too short intervals; and neglecting to consider the signs of reaction, which calls for an interval of rest and reduction of the dose. The best method seems to begin with minute doses and increase gradually and at such intervals as to carry the patient to full dose with as little disturbance as possible. The patient while taking the injections should show no depression of general health, should have no fever above the usual temperature range and should show no irritation at site of injection. As a rule the good results are not obtained until the tuberculin has been used five or six months. Rosenberg[15] reports observations on 90 cases treated at the Bedford Sanitarium, and concludes that, judiciously administered, they have been able to obtain better results than with ordinary methods. In all cases there was decided and uniform improvement in subjective symptoms.

The exanthemata still remain mysteries. That their causation is within the realm of parasitology no one questions. Possibly what we need is a stain that will show them, as in the case of the tubercle bacillus. Dr. Osler has said that the chemists made Koch possible.

Attention has been directed to the dangerous powers of house flies and other insects as carriers of disease. Our greatest attention heretofore has been where they have acted as intermediate hosts, as in malaria and yellow fever; but mechanical transmission of disease-producing organisms is well established and should warrant our consideration.

The relation of protozoa to disease is daily becoming more apparent.

The treatment of respiratory affections by cold air is receiving wide recognition and application. Its beneficial effects are thought by Northrop (its principal advocate) to be due to the stimulation of the cold rather than the oxygen.

In typhoid fever the different modes of infection have attracted the most attention. The problem seems a long way from solution as yet. Cases continue to develop, despite improved water supply and every other precautionary measure. Coleman and Buxton[16] report a bacteriological examination of 1,602 cases.

They conclude that the lymphatic system is primarily affected, and that the disease is due to overflow of bacilli into the blood, where they perish, liberating endotoxins, which produce the symptoms, and further, that the bacillemia in the disease does not constitute a true septicemia, but represents an overflow of bacilli from the lymphopoietic organs.

Mention should be made of blood cultures in this disease as a means of early diagnosis. Also the fact that a more liberal diet is gradually finding favor.

Good results are reported by Comby[17] in the treatment of post-diphtheritic paralysis by antitoxin.

The bacteriology of whooping cough has been extensively studied by D. J. Davis[18], who reports finding an influenza-like organism in 56 of 61 cases examined. His conclusions are that with the evidence at hand no definite statement can be made for or against its specificity in the disease.

In the field of physical diagnosis Grocco's sign in the diagnosis of pleural effusions seems the most conspicuous addition. This is an occurrence of a paravertebral area of dulness on the sound side, due to protrusion of the posterior mediastinum. It has been found to be rarely absent, and is of particular value in encapsulated effusions. The subject is favorably reviewed by Thayer and Fabyan.[19]

Vaccine therapy and opsonins continue an all-absorbing theme. The value of the opsonic index has been much discredited in this country, as will be recalled from the symposium at the recent meeting of the Association of American Physicians in this city. However, it seems that Wright continues to get good results in certain classes of cases with bacterial vaccines, and their dosage and method of administration have been regulated by this index.

No doubt there are many cases that will not yield to this therapy, as is the fact with nearly everything else, but these should not invalidate the good results that have been accomplished in conditions heretofore amenable to no other treatment.

It is to be regretted that this work is at present practically confined to specialists and cannot be carried out by the profession at large, but there seems reason to believe that out of the present intricacy of technic will be evolved a clinical working basis and mankind in general be enabled to profit by a wonderful discovery.

REFERENCES.

[1] *McClure's Magazine*, April, 1906.
[1½] *Jour. Am. Med. Assn.*, February 23, 1907.
[2] *Jour. Am. Med. Assn.*, May 4, 1907.
[3] *Jour. Am. Med. Assn.*, July 20, 1907.
[4] *Berl. Verein. f. inn. Med.*, March 25, 1907.
[5] *International Clinics*, 1907, Vol. I.
[6] *Med. Record*, May 19, 1906.
[7] *Medical Chronicle*, May, 1906.
[8] *Berliner klinische Woch.* XLIII, Nos. 25 and 26.
[9] *Glasgow Medical Jour.*, October, 1906.
[10] *Jour. Amer. Med. Assn.*, March 23, 1907.
[11] *Amer. Jour. of Med. Sciences*, January, 1907.
[12] *Jour. Experimental Medicine*, January 23, 1907.
[13] *Surgery, Gynecology and Obstetrics*, June, 1906.
[14] *Amer. Jour. Med. Sci.*, August, 1906.
[15] *N. Y. Med. Jour.*, October 26, 1907.
[16] *Am. Jour. Med. Sci.*, June 1907.
[17] *Bull. et Mem. Soc. Medicale de Paris*, 1906.
[18] *Jour. Infectious Diseases*, March, 1906.
[19] *Amer. Jour. Med. Sci.*, January, 1907.
"Recent Advances in the Physiology of Digestion." Ernest H. Starling, London, 1906.
"The Science of Nutrition." Graham Lusk.
Progressive Medicine, December, 1906, March, June, September, 1907.

Dr. Lee said that the review had covered so many interesting subjects that it was difficult to discuss it; he thought it might be well for different members to discuss different features. He had been devoting particular attention to the heart, and had been much interested in the bundle of His, lesions of which have been advocated as the cause of heart block; he believes that this theory cannot explain all cases of cardiac irregularity, simulating the Adams-Stokes syndrome. He believes that the further use of graphic methods of studying the heart action may throw more light on the study. He favors the use of the orthodiagraph, which may be used wherever an x-ray apparatus is handy.

Dr. Claytor had been particularly interested in two subjects which he wished to mention. He has been studying the method of palpatory percussion, particularly for the purpose of determining the size of the heart. It has been found that the area of superficial dulness gives no accurate idea of the heart's size, as this may vary more from the condition of the lungs than from the size of the heart. By palpatory percussion we may determine with a surprising degree of accuracy the actual cardiac dimensions; he has demonstrated this a number of times to his own satisfaction, and has verified the findings at autopsy.

The demonstration that there are two varieties of pernicious

anemia has been of great value. Five or six years ago he had had two cases which appeared to be pernicious anemia, but the blood contained no nucleated reds and no gigantoblasts; these were no doubt instances of aplastic pernicious anemia, as they both pursued a rapidly downward course and died.

Dr. Randolph had been attracted by Osler's statement that angina pectoris frequently precedes aneurysm of the aorta, and, in connection with this, the fact that Dieulafoy has laid stress upon an angina of syphilitic aortitis; these patients have attacks of pain similar to pseudo-angina, due to endarteritis of the thoracic aorta. Dieulafoy treats such patients with mercury hypodermatically, and secures good results. These attacks of angina may be the same as those referred to by Osler. Dr. Randolph is particularly interested in this subject, as recently he had had such a case under his own observation.

In the use of tuberculin there are two distinct schools of vaccine therapy: that of Wright, in which the use of tuberculin is governed by the opsonic index; and that of Trudeau, which may be called the clinical school, in which the tuberculin dosage is controlled by the clinical condition of the patient. Wright's cases are for the most part glandular, bone and other local tubercular infections; pulmonary tuberculosis has not received so much attention by this school. In Trudeau's hands the results of the clinical method have been better for pulmonary tuberculosis; larger doses of tuberculin are used, and inoculations are persisted in until immunity to reaction is reached. While the opsonic index is valuable and explains the theory of immunity, it does not explain all the factors of immunity in tuberculosis.

Dr. Wm. A. White said that pseudo-angina is regarded by Gowers as vago-vagal explosions, simulating the explosions in epilepsies even to the frequent preceding aurae. The same explanation may be made of epilepsies of the Stokes-Adams type; several cases of the latter kind have been under observation at St. Elizabeth's Hospital, and they bear a close relation in many respects to ordinary epileptics.

Dr. Kober was glad that Dr. Wilkinson had called attention to dietetics and the progress in the study of the chemistry of digestion; Dr. Kober believes that very many diseases are due to chemical causes originating in the *primae viae*, and therefore too much attention cannot be paid to this subject. The question of human and bovine tuberculosis is yet to be settled. He could not endorse the belief that all tuberculosis is of bovine origin and derived from cow's milk in infancy. The tubercle bacillus is too ubiquitous and may gain entrance to the body in too many other ways to make such a belief tenable. He has thought that there must be some difference between human and bovine tuberculosis, and his feeling on the subject has been heightened by his studies of the past few years; for in many tubercular manifestations in

children, like scrofula and tabes mesenterica, for instance, where it is reasonable to presume that the infection may have been from milk, the progress of the disease is very slow; the diminished virulence of the organisms may in such cases be due to heat and the action of the gastric juice during their passage through the body.

The reference to the housefly as a carrier of infection recalled that the studies of Kelly, Spielman and Cohnheim prompted them as early as 1888 or 1889 to accuse the domestic fly of carrying cholera and tuberculosis. Cornet demonstrated in a fly speck that tubercle bacilli were present and had passed through the intestinal canal of the fly with retained virulence. Dr. Kober himself had pointed out in 1895 that the fly could undoubtedly carry typhoid bacilli from privies to food in dwelling houses.

Dr. Jas. D. Morgan, apropos of the reference to the x-ray treatment of leukemia, said that he had at present a case of leukemia in Garfield Hospital in which the x-ray was being used. The patient came to the hospital in bad condition, and after a few days of treatment with arsenic and iron, the drugs were discontinued and x-ray exposures begun. After ten days the patient has greatly improved; he eats and sleeps well, the spleen has decreased in size and has become painless, the bone pains have been lessened, and the blood picture has improved. Dr. Morgan believes that the x-ray treatment of myelogenous leukemia has come to stay.

Dr. Hagner said that last summer in the European clinics he had seen many cases of bladder tuberculosis under tuberculin treatment; these patients usually improved greatly, but relapsed in two or three months; none are actually cured, but great relief of suffering is conferred and life may be much prolonged. With regard to Dr. Claytor's remarks upon palpatory percussion, Dr. Hagner had been interested in watching Dr. Claytor experiment with the method for outlining the heart; his method had been to determine the limits of the heart upon the cadaver by palpatory percussion and to mark his findings by transfixing the chest wall with a long pin; on opening the chest, of six pins used for this purpose none had pierced the heart, yet all touched it.

Dr. Fremont-Smith referred to the diagnosis of typhoid fever by blood-culture. Blum has studied 360 cases with a view of making early diagnosis by this method; in 100 per cent. of severe cases and in 75 per cent. of mild cases he succeeded in making the diagnosis at the first examination. As the disease advances, the number of bacilli circulating in the blood diminishes, and they are found in far less abundance after the first week. The method is of advantage, as the Widal reaction usually does not appear until the second week.

As to the use of tuberculin in tuberculosis of the lungs, his conclusions upon the subject were published in a paper in 1890.

He had been in Berlin and had seen tuberculin given for pulmonary tuberculosis in ascending doses to fever production, and he had seen these patients fade away and die, one after another. He came home and determined to use the tuberculin (Koch's lymph) in non-reactive doses; in the hospital in St. Angustine he used it in this way and his cases all responded well and improved. The one conclusion in the paper of 1890 was that tuberculin in non-reactive doses would do good.

Dr. A. F. A. King arose primarily to ask a question. Before doing so, he wished to speak of the great energy with which physiological chemists trace out the end products of digestion and of the interesting studies they conduct in the processes of digestion; while the chemists are doing such good work, it devolves upon the practitioners to explain what it is in the food of civilized man that leads to so many diseases. The phosphate of lime and all the phosphates to be found in the human economy are necessary for the construction of bones and the nutrition of the nerve centers. What are the natural sources of these phosphates? The bones of animals and the shells of cereal grains—all of which civilized man throws away. Carnivorous animals eat other animals, bones and all; barbarous man eats grains, shell and all; we no longer do as nature intended—we discard the bones of animals and birds; and the mills take out the pure starch of grains and leave the phosphates in the waste. Moreover, as bones and grains are no longer ground up by the human teeth, the teeth decay and degenerate. Still another inconsistency is that manufacturers get refuse from the ash heap, the dung heap, and slaughter houses, from which they manufacture phosphates which are dispensed over the drug counter.

But the question he wished to ask: What is acute indigestion? Every day we read in the newspapers of the death of distinguished men from acute indigestion; we frequently see death certificates ascribing as the cause of death acute indigestion. The term indigestion is a negative one; acute indigestion is merely the sudden cessation of digestion; why should that be fatal? Surely it would require the action of some toxin or noxious gases from disordered digestion, not mere indigestion, to prove fatal.

Dr. Roy had never given acute indigestion as the cause of death, and thought that it would not be intelligent to do so. Of course, in cases of cardiac disorder some sudden large accumulation of gas in the stomach might occasion fatal syncope; or a sudden attack of indigestion might occasion the rupture of a weakened vessel.

Dr. Mackall asked what was meant by a non-reactive dose of tuberculin: Tuberculin may produce either a local or a general reaction. With regard to the heart, experience teaches that it is dangerous to give digitalis in arhythmias, as it may itself pro-

duce the symptoms of heart block. His, Jr., and Erlanger have shown that arhythmia may arise from other parts of the heart muscle than the bundle of His.

Dr. Reyburn had had some experience with the use of tuberculin in doses of one-half to one mg. : it produced violent reaction and undoubtedly hastened death. He knows now that the dose was much too large, but he still feels very chary of its use ; he cannot see the rationale of it. The treatment is better directed toward building up the system, leaving nature to take care of the infection. As to the good of cold air in tuberculosis, he believes it is due to the greater percentage of oxygen in cold air.

Dr. Fremont-Smith said that in the clinical method of using tuberculin, 1/20 mg. is safe ; 1/50 mg. is safe in the most delicate patients ; much smaller doses are used by those using the opsonic index as a guide. His idea is to give just enough to produce an effect without producing a reaction.

Dr. Nichols said that it was necessary for proper understanding of the discussion to state whether old or new tuberculin is referred to. The old tuberculin is simply a watery filtrate ; the new is a suspension of ground dead bacilli in salt solution. 1/50 mg. of the new tuberculin would be very unsafe ; the beginning dose is usually from 1/10,000 mg. to 1/5,000 mg.

As to two schools of vaccine therapy, it is not merely a question of using or dispensing with the opsonic index ; the differences are more intricate. As to habituating patients to tuberculin, one cannot speak with certainty. Wright's idea is only to keep up the blood reaction to the normal height. The rationale is extremely simple and plain : after the blood resistance is restored to normal, resistance is sustained and cures are effected by food, rest and fresh air. He has seen bladder tuberculosis cured by tuberculin ; at any rate, no more tubercle baccilli could be found in the urine ; in one case there was also a secondary colon infection, which was helped by vaccine therapy.

As to the benefit of cold air in tuberculosis, bulk for bulk there is more oxygen in cold air, but the percentage composition is not affected by cold. Even in warm air there is more oxygen than can be utilized ; the normal 20 per cent. could be reduced to 12 per cent. without doing any harm ; the beneficial effect of cold air cannot rest, therefore, in an increased oxygen content.

Dr. A. F. A. King remarked that of all the 75 or 100 medical men present not one had answered his question : What is acute indigestion ?

Dr. S. S. Adams said that two years ago he had had in his care a boy with myelogenous leukemia of a severe grade ; the spleen was enormous and the prognosis seemed very unfavorable. Dr. Metzerott gave x-ray treatment, and the spleen decreased in size very rapidly ; three months later the boy rode up on a bicycle to report to Dr. Adams, and was so improved that he was

not recognized. Six months later Dr. Metzerott said that the spleen was much better but there was no improvement in the blood. The boy was kept under treatment, but he died a short time ago; the spleen had again increased to large proportions.

As to blood cultures in typhoid, it would be interesting to know in Blum's cases when and where the diagnoses were made; most cases enter hospitals in the second week, when the Widal reaction is available; were Blum's cases diagnosticated early or late?

Dr. Fremont-Smith said that as far as he remembered, all of Blum's cases were diagnosticated in the first week.

All of his references to tuberculin applied to the old lymph of Koch, which is still preferred by some practitioners.

Dr. Reyburn said that if cold air contains a larger volume of oxygen on entering the lungs, it must be of benefit.

Dr. Wilkinson thanked the members for the generous discussion. Dr. Mackall had spoken of the danger of digitalis in arhythmia. Erlanger and McKensie have produced heart block by administering digitalis.

He thought that acute indigestion is merely a dumping ground for diagnostic ignorance, and is often made wherever the history of injudicious eating can be obtained. Autopsy would most often disclose an apoplexy.

As to blood cultures in typhoid fever, Cole and Buxton have found the bacillus in the blood in 89 per cent. of cases; the frequency of positive findings decreases as the disease advances.

In one case he had produced a decided reaction by the inoculation of 1/10,000 mg. of tuberculin T. R.; the temperature rose three degrees, intense headache appeared and the patient felt as if he were dying. Dr. Wilkinson had seen a girl who came to him with a temperature of 104, weight 126 pounds; a history of an acute condition, accompanied by persistent cough. Physical examination disclosed rales over both lungs, a cavity in the infraclavicular space, right lung. She was put to bed, with the usual treatment for phthisis; after six weeks the fever disappeared, and her condition remained stationary for a time. She then began to fail and was reduced to 105 pounds in weight. He gave her 1/10,000 mg. tuberculin; there was no reaction, but the next day she began to eat, and she steadily improved (with occasional doses of tuberculin), until now her weight is 122 pounds.

REPRINTS from the ANNALS containing an account of the dinner to Dr. J. Ford Thompson can be obtained from the printer, R. Beresford, 618 F Street, N. W., or from Dr. D. S. Lamb, at ten cents a copy.

CASE OF INFECTIOUS CEREBRO-SPINAL MENINGITIS.*

By J. D. MORGAN, A. B., M. D.,

Washington, D. C.

J. J., a colored boy, aged 15, entered my service at Garfield Hospital, Nov. 17, 1907, with the following history, which was obtained from his sister: He was in excellent health until Nov. 13, when he returned from school with a severe headache, felt chilly and vomited. The next morning the retraction of the neck began and he was talking "out of his head." When he reached the hospital he was delirious. I examined him and found him in the tonic stage of opisthotonos; extreme sensitiveness to noises and touch; talking loudly and irrationally; eyeballs protruding, sclerotics injected, pupils equal, moderately small; carphologia; unable to rise. The lungs were not involved; meteorism present. There were but few spots on the body; *tache cerebrale* pronounced. Babinski's and Kernig's signs positive; patellar reflex was not exaggerated. The eyes could not be satisfactorily examined; the ear drums were congested and bulging. Nov. 18, 15 cc. of fluid were drawn by lumbar puncture, most of which was seropurulent; examination of the fluid showed the *diplococcus intracellularis meningitidis*. The blood examination showed a leucocytosis of 37,000. The fever chart ran from 101, on the day of his admission, to 108, Nov. 22, the day of his death. It was possible to get him to take only a very little nourishment, and he had to be kept under bromide and chloral.

Autopsy at 2 P. M., Nov. 22, by Dr. W. W. Wilkinson. Dilatation and engorgement of the meningeal veins, which were of a blue-black color. Convolutions somewhat flattened, and filling in the various sulci is a thick greenish-yellow lymph. This condition is seen over the entire surface and in the longitudinal fissure. The base of the brain is most affected, and from the optic chiasm back to the posterior fossa, under the cerebellum, the lymphopurulent exudate was very thick, viscid and adherent to the brain. The brain as a whole is softened. The lateral and third ventricles are distended with sero-pus. Numerous punctate

*Reported, with specimen, to the Medical Society, November 27, 1907.

hemorrhages through the white matter. The vermis of cerebellum is necrotic, and a condition of congestion and exudation is present as in the cerebrum. The cord is softened and necrotic; a white purulent exudate is seen encircling the cord throughout the entire canal, within the sheath.

Anatomical diagnosis: Purulent cerebro-spinal leptomeningitis; purulent conjunctivitis; purulent urethritis; sero-fibrous pericarditis; fatty degeneration of the heart and liver; passive congestion of kidneys; fibrous pleurisy; broncho-pneumonia.

Dr. S. S. Adams said that he had seen several similar cases. He rose especially to speak of Dr. Flexner's thirty-five cases cured by the use of his antimeningitis serum; these results were recently reported to the New York Academy of Sciences; the cases were of varying severity. Dr. Adams thought these facts might be of interest to members, as Dr. Flexner is the kind of man who would be glad to furnish the serum upon application.

Dr. S. E. Jelliffe, of N. Y. City, was glad that Flexner's work had been mentioned. Later reports confirm the early statements of Dr. Flexner; the serum does seem to have a specific action against the diplococcus intracellularis meningitidis. The Rockefeller Institute is prepared to furnish the serum upon application.

Dr. J. P. Miller inquired how long it would take to get the serum.

Dr. S. S. Adams said the quickest way to secure the serum would be to apply for it by telephone and have it sent by special messenger; in this way it could be delivered in Washington in comparatively a few hours. (On Dr. Adams' motion the Secretary wrote to Dr. Flexner and received the subjoined reply.)

Dr. Claytor was interested in the presence of Babinski's sign in Dr. Morgan's case: Koplik has stated that the Babinski sign is rare in epidemic cerebro-spinal meningitis, but is frequent in tuberculous meningitis. Another point of interest is the not infrequent failure to obtain fluid by lumbar puncture on account of the plugging of the canula by the heavy sediment of pus in the inferior extremity of the spinal canal; the fluid will flow readily if the needle is introduced higher up.

Dr. Jas. D. Morgan said that Flexner had reported 47 cases, with 34 recoveries and 13 deaths; the mortality in his series was thus reduced to 36 per cent. Dr. Morgan had a second case at the Garfield Hospital under treatment with Flexner's serum.

"We shall be able at the Rockefeller Institute to supply a limited quantity of the antimeningitis serum to be used in cases of epidemic meningitis, in which lumbar puncture has been made and the diagnosis established bacteriologically, if the cases are in

the early stages of the disease. The serum must be injected into the spinal canal and should be used within the first forty-eight to seventy-two hours of the disease, preferably. I am enclosing a circular which will give you general information concerning the manner of its employment. Dr. Morgan has a small quantity of the serum at the Garfield Hospital and he would probably be able to supply it in suitable cases. It must not be used except in cases in which the diagnosis is established by bacteriological examination."

General Instructions for the Employment of the Antimeningitis Serum.

1. The antiserum should be kept in a refrigerator until it is to be used, when it should be warmed to the body temperature before it is injected.

2. The antiserum is to be introduced directly into the spinal canal after the withdrawal of cerebro-spinal fluid by lumbar puncture.

3. The quantity of antiserum to be used at a single injection should not exceed, for the present, 30 cubic centimeters. It is desirable, although it would not appear to be essential, to withdraw from the spinal canal at least as much fluid as the amount of antiserum to be injected. The injection should be made slowly and carefully to avoid the production of symptoms due to increased pressure. This precaution should be exercised especially where the quantity of cerebro-spinal fluid withdrawn is less than the amount of antiserum to be injected.

4. The injection of antiserum should be repeated every twenty-four hours for three or four days, or longer, or at somewhat longer intervals, depending upon the nature and gravity of the case. Whether any advantage will be gained by more frequent or more numerous injections than here indicated, a wider experience must decide. As much as 120 cubic centimeters of the antiserum have been injected into the spinal canal in four days, and as much as 200 cubic centimeters in the course of a single case of meningitis without causing unpleasant symptoms.

5. The evidence at hand indicates that the earlier in the course of the disease the injections are made the better the results. Hence should the film preparation prepared from the first fluid obtained by spinal puncture show Gram-negative diplococci, some of which are within leucocytes, an injection of the antiserum should be made immediately and without waiting for the results of culture tests. Should the diagnosis be left in doubt or the disease prove later to be of another nature than epidemic meningitis, no harm will have been done by the injection of the antiserum.

6. In the event of relapse after a period of arrest of active

symptoms the injection of the antiserum should be renewed. Particular attention should be given to the microscopical appearances of the spinal fluid with reference to the number, staining properties and viability of the diplococcus, and the approximate number and variety of leucocytes, present during the relapse.

7. Although the best results have thus far been obtained where the antiserum has been injected early in the disease, yet the antiserum should be used in the later stages also until our knowledge governing the value of the serum becomes more precise. The indications at present are that it is useless to employ the antiserum in the very late stages of the disease, in which chronic hydrocephalus is already developed.

8. Precise records of the manner of action of the antiserum upon the general symptoms of the disease and the local inflammation and the diplococcus should be kept. Information is greatly desired on the influence of the antiserum upon the number, appearances, growing properties, etc., of the diplococcus, upon the relation of diplococcus to phagocytosis, and on the number and appearances of the leucocytes, before and after the antiserum injections. Counting the leucocytes in the circulating blood, before and after the injections, would help determine whether the antiserum tends to bring a greater number of leucocytes into the inflamed membranes, or whether it leaves the number unchanged or causes cessation of the emigration.

9. Until the antiserum is proven to be of value or of no value in the treatment of epidemic meningitis its manner of action should be carefully observed and recorded, so that a definite decision may be reached as quickly as possible.

10. It is expected that copies of the records of the cases of meningitis treated with the antiserum will be sent promptly to the Director of the Laboratories of the Rockefeller Institute for Medical Research, to be used in preparing an analysis of the results of the employment of the antiserum.

Training in Medical Organization.—The students of the University of Pennsylvania Medical School have formed an organization, the purpose of which is to acquaint the undergraduates with the workings of the American Medical Association, after which it is very closely modeled. The various student societies take the place of the State organizations and elect members to a House of Delegates, which transacts all the business of the association. An annual meeting is held, at which papers are read by chosen members, thus encouraging original research and a scientific spirit. The organization is named "The Undergraduate Medical Association of the University of Pennsylvania," and already has over two hundred and fifty members.

THE PROGRESS OF NEUROLOGY.*

By D. P. HICKLING, M. D.,

Washington, D. C.

The progress of neurology in the District of Columbia during the past year has been marked by the establishment of a department of neurology at the Georgetown University Hospital that is under the charge of the writer, and the organization of a special society of nervous and mental diseases with a membership of twenty men who are actively interested in this special branch of medicine. It is also interesting to note that quite a number of able papers on neurological subjects have been read before this Society, and several of the smaller medical societies of the city have had under discussion from time to time cases and papers of neurological interest.

Surgical.

Fortunately for the writer as well as the profession generally, in April of this year Dr. J. B. Murphy, of Chicago, published his valuable article upon Neurological Surgery in which he presents the anatomy and physiology of the nervous system as applied to surgery in such a practical form that it can be utilized by the general surgeon as well as the neurologist; he clearly outlines the limitation of operations on the brain, cord and peripheral nerves. I therefore believe it will prove interesting to dwell on some portions of this article. Murphy calls especial attention to Weisman's dictum that ganglionic nerve cells once destroyed in the gray matter of the cord are never reproduced or replaced, and clearly and squarely states his own opinion, based on personal investigations, that in the human subject regeneration of degenerated nerve fibers of the spinal cord has not been demonstrated as far as function is concerned; therefore all operations for suturing the cord should be abandoned, as it increases the injury and adds to the danger without any possible benefit. His clear and concise statement that when immediate and complete annular paralysis of motion and sensation below the line of fracture occurs, complete division of the cord can be assured and operative interference is therefore contraindicated. The rule laid down by Murphy that where the axone is covered by neurilemma

* Read before the Medical Society, November 27, 1907.

anatomical and functional regeneration will occur, is of the greatest practical value, as it opens up a large field of curative operative work upon the peripheral nervous system as well as restricts somewhat the operations on the cord, although an early operation for compression of the cord from any cause, especially fracture, if the fibers are not cut, is so clearly stated that delay in this important class of cases is no longer justifiable. In bullet and punctured wounds where the spinal cord is injured, operation is not indicated unless infection or hemorrhage occurs, then operation should always be considered.

Dr. Murphy's suggested operation in syringomyelia is based on sound principles and probably will be productive of better results than we have heretofore had in this condition. His technique for irrigating and draining the subdural space in cases of acute leptomeningitis is worthy of the greatest consideration.

The clinical symptoms of extramedullary spinal tumor, namely, local pain, long-standing root symptoms, preceding a slow and progressive paralysis of motion, are so clear as to be observed and recognized by all.

His paragraph on Pott's disease and the paraplegia resulting therefrom and its surgical treatment is well worthy of consideration, and clearly shows that these cases should be operated upon as soon as the diagnosis is made, since the prognosis does not depend upon the age or the intensity and extent of the symptoms, but upon the actual damage done to the cord. His technique of laminectomy should be followed in all cases where the cord is to be exposed and should, in my judgment, replace all other methods usually described ; this operation is greatly facilitated by the use of Murphy's conical drill. His directions concerning the bladder, that is, to refrain from the use of the catheter and allow it to overflow, saves danger of infection, which is the immediate cause of so many deaths.

The surgery of the peripheral nervous system, now that Murphy has so clearly pointed out to the general profession the principles of degeneration and regeneration, ultimately must produce good results, especially in facial paralysis ; anterior poliomyelitis, atrophy and dystrophy of the extremities and even neuritis, are all amenable to treatment. His technique of end-to-side anastomosis with imbedding in muscle, will make it possible to obtain good results in many cases of paralysis.

In facial paralysis his operation for spino-facial anastomosis will restore function in many cases. In anterior poliomyelitis extreme cases are greatly benefited by anastomosing the external popliteal nerve into the internal popliteal nerve with a plastic operation upon the tendons.

The intradural resection of the posterior roots of a number of spinal nerves for the relief of severe and continued pain has not produced the satisfactory result that was expected, although it is still believed by some that improved technique will give better results.

Under the heading of a new method for surgical relief of certain painful or paralytic affections of the nerve trunks, in the November number of *The Annals of Surgery*, Dr. W. W. Babcock makes a preliminary report and gives four successful cases of treating a nerve by what he terms Disassociation; in other words, he locates the seat of nerve pain or paralysis, and makes a free longitudinal incision into the nerve sheath; the nerve trunk is then lifted upon one or two fingers, held taut, and the nerve fibers carefully separated by means of a small, sharp tenotome. By this process the nerve is transformed from a rounded cord to a ribbon-like band of separated fibers. He then removes the nerve from any cicatricial or fibrous tissue, and prevents future adhesions by strips of adipose tissue, usually secured from beneath the skin. While intending this as a preliminary report merely, the results would seem to show that the method of disassociation is superior to nerve stretching for the relief of painful conditions and, in certain forms of peripheral paralysis in the cases quoted, would seem to give better and more prompt results than an anastomosis or nerve bridging.*

The same number of the *Annals* gives an interesting article upon operations upon the spinal column, by W. S. Baer, of Baltimore. He gives three cases of painful spine, each simulating other diseases, so that mistakes of diagnosis had been made, when the true condition was due to finger-like projections of the bone springing from the vertebrae, which were diagnosed by means of the radiograph. The diagnosis once made, an easy and safe operation resulted in cure.

Suturing of Nerves.—This operation, without infection and

* This is apparently a modification of a method of Reclus, of France, who resorted to what he called "Neuro-tripsis" or harrowing.

without intervention of connective tissue, with the improved technique, yields results as uniformly successful as bone suturing. The earlier the operation is done the better the results. The stretching of nerves is being performed more frequently than formerly, and has been found beneficial in varicose ulcers of the legs, Raynaud's disease, indolent ulcers with great oedema, all trophic skin conditions, including ulcers and hypertrophies.

The alcoholic injection for neuralgia is apparently one of the greatest triumphs of recent years. Schlosser, of Munich, is reported to have had 100 per cent. of cases cured since 1902. Nearly all cases of Levi and Baudouin were cured. Oswalt, of Paris, made several hundred injections, one-third of which relapsed and had to be re-injected; all, however, were cured. Patrick, of Chicago, has reported six cases of trifacial neuralgia, all of which were cured of their pain; no bad results from this treatment have been reported.

Nerve Transplantation in Athetosis.—An attempt to relieve a very violent athetosis by Spiller and Frazier in a young man of 19, which had probably existed from birth, is interesting. His constant involuntary exercise had developed powerful muscles, but he had no control over himself, and it was difficult even to dress him. Several years before, the cortical center for the left upper extremity was excised, after which his left arm was more rigid but the athetoid movements continued unabated. The idea of the operation was that the excessive innervation of the flexors could be switched off by nerve transplantation into the extensors, which should produce a more normal relation between the antagonistic muscles and probably lessen the movements. It was an attempt to influence a brain lesion by changing peripheral nerves; the operation was a lateral anastomosis of the divided median and ulnar nerves, made with the musculo-spiral nerve. Later the circumflex and musculo-cutaneous nerves were divided and an end-to-end anastomosis made between the central end of one and the distal end of the other; this was done in both nerves; after seven and a half months the result was very favorable; after recovering from the paralysis immediately following the operation the patient is regaining the use of his arms and the athetosis has practically disappeared. This would seem to establish the fact that with partial paralysis produced by operation, athetosis will disappear. If this condition is the result of irritation of central

motor fibers it seems strange that no symptoms are produced by the prevention of the manifestations of this irritation.

The prompt relief resulting from cauterization of the nasal septum in cases of bronchial asthma would seem to prove the neurotic reflex cause of this condition, benefiting not only the patient but the literature of the subject as well.

Medical.

An account of a so-called automobilist's myelitis was published in the *Lancet*, July 7, 1906, by W. J. Burrows; the case is believed to be one of localized myelitis. The patient, a motor-omnibus driver, subject by virtue of his occupation to a great deal of jarring, was seized suddenly after a hard day's work, involving considerable muscular action and an excessive amount of jarring, with a persistent acute pain in the right hip and aching in the back; there was no fever; the right leg was spastic and the deep reflexes were first exaggerated, especially on the right side; there was at first hyperaesthesia, which later changed to a total anaesthesia of the right leg, with decreased sensibility to heat and cold, while sensation in the left leg was unimpaired. He recovered entirely in about a month.

Locomotor Ataxia.—The question of the regeneration of nerve fibers affected in this disease has been studied by several observers, and while the majority of neurologists still believe regeneration impossible, yet the great improvement resulting from the educational methods of treatment in this disease, would seem to show that functional regeneration does take place. A special anatomical study of the spinal roots and ganglia has been made by Nageotte. One of his special findings is what the author calls Collateral Regeneration. He claims to have observed in the spinal ganglia of both man and the lower animals a regenerative process consisting of the growth of fine fibers from the cell body; on tracing these fibers he finds that they end in irregular-shaped masses many times wider than the diameter of the fibril. It is believed that these fibrils are evidence of a general tendency toward regeneration; the author states that these spring from either the cell body or the axis cylinder, and terminate in the end masses which represent embryonic conditions of nerve growth; he also found this process of collateral regeneration going on in

both recent and long-standing cases of tabes. These observations have been confirmed by Marinesco. These fibers are non-medullated and resemble very closely the new fibrils in a regenerating peripheral nerve.

In the trophic disturbances of tabes it has been found that prompt treatment in the early stages will often bring about a speedy cure; the fact that these conditions are painless and do not attract physicians' or even the patient's attention until destructive processes are far advanced, is probably the reason for the persistance of these serious conditions. This is especially true where considerable joint effusion is the chief symptom; if this were promptly treated by aspiration, compression and rest, many cases would be promptly cured. The perforated ulcers, like the neuropathic decubitus, are not only amenable to treatment by rest and antisepsis, but they are preventable by protecting from mechanical irritation and infection.

The gastric crises have been cured by surgical intervention. In a case reported by Cutte and Valles, the patient, 41 years old, having Argyle Robinson pupil and loss of knee jerk, had severe gastric crises for five or six years, the attacks getting more frequent and more violent, some of which lasted several days. An abdominal section was done during one of the attacks, the vessels of the stomach were found greatly dilated, the celiac axis was isolated and, after denudation, the solar plexus was stretched; the result was most successful, and three months after, when the report was made, there had been no return of the symptoms. This operation had been done before with benefit in two cases of gastralgia by Jabouley.

A new symptom of tabes, apparently of some value, known as tendon analgesia, seems to be quite reliable; when the tendon Achilles is pressed upon just back of the malleoli, in health, it gives pain; in tabes this pain on pressure is lost; the test is an easy one and said to appear early, and when found can be relied upon.

The educational treatment which has been so successful in tabes has received a special impetus in this country by the visit of Fraenkel, of Switzerland. This method, when carefully followed, has enabled the bedridden patients to walk, not only without cane or crutches but even in the dark, and has been a great factor in the relief of pain. Fraenkel has also called attention to

the advantage of mechanical treatment in nervous diseases, and has demonstrated the good results already obtained in tabes, convulsive tic, aphasia and hemiplegia. He has also called attention to its danger in spastic cord-conditions.

Although a number of competent observers are steadily at work on the epilepsies there is little new in the treatment of these conditions. The Flechsig method, by using increasing doses of opium for 51 days, then changing to the mixed bromides given in increasing doses, is of value only in selected cases under careful and complete supervision. J. F. Munson, of the Craig Colony, in an interesting paper on the metabolism of epilepsy, presents a review of the literature relating to this subject. He finds that there are decided changes in the metabolism of the epileptic and in the toxicity of his body fluids; he therefore believes that further work along biochemical lines will solve the problem of the nature of this condition.

There has been but little advance made in hysteria except in the treatment by suggestion, as ably exploited in the work of Dubois.

The subject of aphasia has not only been revived but made especially interesting on account of Marie's papers, which call in question the formerly generally accepted theory that motor aphasia was due to a lesion of the third frontal convolution. Marie's claim is that the different aphasias are different forms of the same disease and that they are due to an intellectual defect rather than to any special localized lesion; his views are being rapidly accepted.

In investigating the question Drs. Fraenkel and Onuf tabulated 104 cases from the literature, which embraced all cases reported with clinical and autopsy findings; only five showed a lesion confined to Broca's area; in two cases there was a slight encroachment on adjoining regions, in the other 99 cases Broca's area was not involved, or there were marked additional lesions of other cortical or subcortical areas. Of the seven which showed involvement of Broca's area only two had a permanent aphasia; the other five cases had temporary aphasia only, while the lesions found were of course permanent; the other 97 cases showed such widely distributed lesions that it was impossible to think that the pathological conditions could produce a clearly defined train of symptoms, so that it is evident that the old theory is wrong;

further researches are necessary before definite conclusions can be reached.

In Paralysis Agitans.—The treatment by hyoscin and duboisin has been of real service in controlling this symptom complex; a minimum dose is first given, and gradually increased until the desired effect is produced; the electric bath in this condition has also proved of great usefulness in a number of cases reported.

Shannon, in an article published in *The Journal of Nervous and Mental Diseases*, reports an interesting case of acromegaly and epilepsy. In this paper he states that the weight of opinion is in favor of acromegaly being due to an affection of the essential substance of the pituitary gland (due to malignant or benign growth either involving the gland substance or else causing atrophic changes by pressure). He states that the cases reported in which there have been tumor of the pituitary gland and no symptoms of acromegaly, are explained by the fact that the pituitary structure was not, or was only partially, involved in the growth; in very few cases of this kind reported has there been a careful microscopical examination of the gland.

Exophthalmic Goiter.—The brilliant results of surgical treatment in this disease, especially in the earliest stages, give a record in operations performed after the disease is well developed of 75 per cent. cured with a mortality of only 5 per cent., and it is believed by all operators that with early operations and improved technique the percentage of cures will increase, with fewer deaths; while it is true that without operation many cases improve under treatment of rest, diet, sodium phosphate, the x-ray and the use of iodothyrin, yet there is no form of treatment that gives the percentage of cures that can now be obtained through operation, although there are some who believe that the serum treatment of Rogers and Beebe, prepared from the nucleo-proteid and thyroglobulin from normal and pathogenic glands, will yield good results.

The papers of Halstead upon the thyroid and parathyroid glands have been of great value, especially in relation to tetany; his observations based upon his surgical work have silenced those who believed that tetany was a hysterical condition.

The traumatic neuroses have at last been placed squarely and properly before the general profession by Dercum in volume II of Keen's System of Surgery, and it is to be hoped that hereafter

traumatic hysteria will be placed in its true position before courts of justice, and these well defined cases with their definite train of symptoms will no longer be classed as malingerers.

It is also gratifying to note that in the same article Mannkopf's symptom is given its proper consideration ; since the publication of Mannkopf's paper, too much as well as too little has been claimed. Its presence clearly indicates a localized pain, while its absence means absolutely nothing.

Paradoxical Reflex.—This reflex was first called to our attention by Alfred Gordon, of Philadelphia, and published Feb., 1905, as a reflex present in cases of cerebral compression ; the reflexes of Babinski and Oppenheim, as well as ankle clonus, being often absent. Since 1905 the reflex has been studied by a number of neurologists and found to be of great importance, having especial value when the motor tract on the same side is involved ; it is almost constantly found in hemiplegics. It is also of great value in the differentiation between functional and organic conditions, the paradoxical reflex never being present in locomotor ataxia, hysteria or in health. Gordon, in a recent article, sums it up as follows : " It is a sign of slight irritation or early stage of the lesion of the motor tract." In an interesting case operated on by Dr. Keen, where a hemorrhagic effusion was found in the membranes on the right side of the brain, there were no distinguishing symptoms as far as the reflexes were concerned except the paradoxical reflex ; after the operation, the pressure having been removed, the reflex disappeared ; a few days later, when the drainage was obstructed, the reflex again appeared. In another case, reported by Gordon, of injury to the right temporal region, with headache and stupor, there was no Babinski, no ankle clonus and no Oppenheim ; the case was examined by Drs. Mills and Dercum, and an operation done by Da Costa, who found marked pressure ; after the operation the reflex disappeared. In the above cases the paradoxical reflex was the leading symptom present, and the operation in each case seemed to clearly demonstrate its great practical importance as a diagnostic sign.

Dr. Wm. A. White expressed his appreciation of the paper and the method of arrangement. There have been two or three things of interest in the literature recently which were not mentioned in the review. It has been demonstrated that apoplexy

of the cord may occur in the same way as in the brain, and from the same causes, especially trauma. As a result of the work of Marie, the conception of the etiology of aphasia has been entirely altered. Broca's center has lost its long held repute, since examination of the specimens prepared by Broca himself shows that in them were lesions wider spread than the third frontal convolution. The prevalent idea at present is that aphasia may result from any lesion of the numerous association fibers connecting the centers necessarily correlated in the act of speaking or expressing thought ; such lesions often can only be demonstrated by serial sections of the brain. The interest of the profession in acute anterior polio-myelitis has been stimulated by the prevalence of that disease in epidemic form in New York and Baltimore. As to epilepsy, or more properly the epilepsies, we are still in the dark with respect to the etiology of these conditions ; they are probably due to some toxic substance—at any rate investigation at present is proceeding along such lines.

Dr. S. E. Jelliffe, of New York City, said that the resumè had covered a particularly active field ; reference to Murphy's work in the paper did justice to important contributions. A point to be emphasized is the bright prospect of surgical interference in diseases requiring the opening of the spinal canal. Harrison, of Australia, has advanced a new method of surgical aid in cases of low transverse myelitis. By taking a motor nerve emerging from the cord above the myelitis and implanting it in the segment of cord below the lesion, a certain amount of innervation may be secured in the lower segment ; in one case radical improvement in bladder control was secured.

In syringomyelia, the results of Remont and others with the use of x-rays and violet light indicate that good can be done ; how the good is accomplished is matter for conjecture.

Peripheral nerve surgery has done and can do still more good by anastomosis, as in Erb's paralysis and in anterior polio-myelitis.

Alcohol injection for *ticdouloureux* is an operation that has come to stay ; improvements in the technic will of course be looked for.

Hysteria remains the child of neurology. The work of Dubois has contributed much to the treatment of this disease ; if it should do no more than alter our point of view of hysteria it will do much good. Reeducation after the manner suggested by Dubois can undoubtedly be productive of great good in a certain class of hysteria patients.

The relation between the parathyreoids and paralysis agitans is a new subject not referred to in the paper. A light seems to be breaking upon the influence of glands of internal secretions upon major and minor spasms.

He does not share Gordon's enthusiasm for the paradoxical reflex : it rests upon the same foundations as Babinski's and Oppenheimer's reflexes, and is not so dependable.

A committee has been appointed in New York to study the epidemic of acute anterior polio-myelitis ; while the work of the committee is yet in its beginning, it has been found that the epidemic is much wider spread than at first suspected. It has been brought out that there is usually great difficulty in making an early differential diagnosis ; many cases resemble epidemic cerebro-spinal meningitis. It is important to make the diagnosis early in order to institute rational therapy ; early lumbar puncture will clear up the diagnosis at once, as Flexner has pointed out that in this disease there is an absence of bacterial and cellular elements in the spinal canal fluid. He called attention to the probability that acute anterior polio-myelitis may be due to some gastro-intestinal infection with a resulting specific action on the spinal cord.

Dr. S. S. Adams said that there are no cases of polio-myelitis at present in this city ; he saw his last case about three years ago ; even in the paralytic stage few cases are met with at present. As to the diagnosis, he agreed with Dr. Jelliffe that these cases are mistaken for almost anything else at first and are usually not correctly recognized until the typical paralyses appear. In view of Flexner's statements, can anything be gained by lumbar puncture? The disease looks like an acute toxemia, and behaves as such.

Dr. Jas. D. Morgan said that at present he has in his service at Garfield Hospital a case of anterior polio-myelitis in a boy of 15. The boy had been exposed in a rain storm ; the next morning he attempted to go to work but was unable ; three days later he entered Garfield Hospital with unmistakable signs of anterior polio-myelitis : drop wrist, drop ankle, Kernig present, Babinski absent, knee jerk, ankle clonus absent. As to the treatment of acromegaly, he wished it recorded that a few years ago he had had an extract of pituitary gland prepared and, with Dr. Clark, tried it in cases of acromegaly at St. Elizabeth's, without good effect.

Dr. Mackall said that the statement had been made that no bad effects follow acohol injections for ticdouloureux ; he knew of one case in which injection was followed by extensive sloughing of the face, and had heard of a case of sciatica in which paralysis followed alcohol injection.

Dr. P. C. Hunt wished only to call attention again to Younghans' theory that exophthalmic goiter is due to the toxic product of a disordered gland ; from the medical standpoint, Rogers' serum is ideal.

Dr. Claytor called attention to one case of complete section of the cord, sutured, with recovery ; that of Stuart, of Philadelphia.

Dr. Randolph added his testimony that Stuart's case actually recovered and made great improvement.

Dr. Vaughan said that the case referred to was that of Stuart

and Hart ; it was one of gunshot wound of the cord, which was sutured, with partial recovery. There is no case on record of perfect regeneration after section of the cord.

Dr. S. Ruffin had seen recently two or three interesting cases of nerve surgery. One was the suture of the musculo-spiral nerve after resection of about two inches of nerve degenerated into scar tissue after trauma ; end-to-end anastomosis was done, with return of function. Two other cases were of ticdouloureux, both cured by injections of alcohol ; in one the cure has lasted twelve months ; in the other, a case of less severity, the cure has been perfect though not so much time has elapsed since operation. As to the applicability of the treatment to mixed nerves, as the sciatic, he felt some doubt.

Dr. Hickling thanked the members for their remarks. With regard to sloughing following alcohol injections for neuralgia, he suggested that some solutions for this purpose contain other ingredients than alcohol ; some other agent may have caused the sloughing in Dr. Mackall's case.

He suggested the possibility that Dr. Morgan's case might have been one of multiple neuritis.

SOME EXPERIENCE WITH HYOSCINE, MORPHINE AND STRYCHNINE AS A SURGICAL NARCOTIC.*

By WM. A. JACK, Jr., M. D.,

Washington, D. C.

About eighteen months ago I received an article written by Dr. Lanphear, of St. Louis, on narcosis produced in surgical operations, by the hypodermic administration of hyoscine and morphine with cactine. His claim was primarily that narcosis produced by this method was safe, and that the unfavorable results reported from the use of scopolamine and morphine as a narcotic were due to the fact that scopolamine was not a true alkaloid but a mixture of hyoscine and atroscine.

He reported a long series of major operations with very satisfactory results. Unfortunately, I have not his paper at hand, and cannot quote his statistics.

I used the narcotic for the first few times with fear and trembling as to the result. However, after each use confidence increased, and at the present time, I believe that, in suitable cases,

* Read before the Medical Society, November 13, 1907.

it is the most satisfactory surgical narcotic that we have. My conclusions are based on the use of this agent in two hundred consecutive cases that were unselected, and while three deaths occurred in the series, in no case was the unfavorable termination attributable, in any degree, to the narcotic used.

The cases are classified as follows, the ages of the patients ranging from eight to eighty years:

Amputation: Arm at elbow, 1; arm at shoulder, 1; foot, 2; leg, 1; hip joint, 3.

Appendectomy, 20.

Bone operations: Osteomyelitis, 5; wiring of fracture, 6; celiotomy, 35; cauterizations, 15.

Extirpations: Axillary glands, 2; cervical glands, 6; inguinal glands, 20; carcinomatous breast, 3; hemorrhoids, 10; external urethrotomy, 10; fistulo in ano, 15.

Hernioplasty: Inguinal, 20; femoral, 2; umbilical, 2; mastoid operation, 3; nephrorrhaphy, 2.

Plastic work: Uterus, 5; vaginal outlet, 5.

Prostatectomy: Perineal, 2; vaginal hysterectomy, 4.

Method of Administration.—A tablet containing morphine sulph. gr. 1-4, hyoscine hydrobro. gr. 1-100, strych. sulph. gr. 1-120, which for convenience will be referred to hereafter as H. M. S. tablet, is injected into the arm or leg beneath the skin, three hours before the operation. This injection is repeated in one hour, and again about forty-five minutes before operating.

If the patient is not snoring fifteen minutes before operation, a fourth injection is given. This fourth injection is seldom necessary. If the subject is fat, the injection should be given deep enough to penetrate the entire layer of subcutaneous fat, otherwise the narcosis will be unsatisfactory on account of the slow absorption that takes place in obese individuals.

If the patient is not asleep after the fourth dose, which is seldom necessary, a few minims of chloroform are all that is necessary to produce a profound narcosis that lasts usually from two to three hours, which is plenty long enough for the performance of any major surgical operation.

Disadvantages.—This method of narcosis is not suitable for emergency operations, for the obvious reason that it is necessary to begin the administration of the drug at least two hours before the operation is to be started.

In minor operations, the long period of somnolence following the administration of this mixture will be out of all proportion to the seriousness of the surgical procedure.

Rigidity.—The skeletal muscles are not as flaccid as in ether or chloroform anesthesia, but this is not usually an insurmountable difficulty, as by the use of strong retraction the muscles may be tired to the extent of causing enough relaxation to permit of almost any intra-abdominal manipulation.

Respiration.—In most cases the respiration is slow, varying from twelve to fourteen per minute. In one case the respiration went down to three per minute, and remained at this rate for twelve hours. The pulse is usually slow, from 72 to 84, and of good volume, except in cases of severe hemorrhage, when the usual phenomena of lack of circulating fluid take place.

Advantages.—First: The patient is ready for operation when the operator arrives. There are no annoying delays, as so often happen when chloroform or ether is used. This may seem a small matter, but in a crowded clinic, where it is necessary to perform four or five operations in the course of the morning, it is a big item, for the operator can so plan the administration of the mixture that one case will be ready for operation as soon as the other is finished.

Second: In the case of drunkards the method works exceedingly well. There is none of the struggling and cursing so often seen and heard in anesthetizing these unfortunates.

Third: Absence of nausea and pain following abdominal operations. In nearly all the abdominal cases reported there was very little post-operative nausea and pain. The patients sleep quietly for from four to seven hours, waking up enough to pass urine, and, when they are fully recovered from the narcosis, in many instances do not believe that they have been operated upon.

Fourth: Nervous individuals. It is a great advantage to be able to give the patient who has a dread of operation a hypodermic in his room and have him taken to the table, the operation done, and then return him to bed without any struggle or consciousness on his part that anything has been done.

This is not a scientific paper, but is the record of practical work, and is read before you in the hope of bringing out the views of those present in regard to a subject (surgical narcosis) that should be of interest to every practitioner.

Dr. Jas. F. Mitchell said that the method as described by Dr. Jack sounded ideal. Dr. Mitchell would approach his first narcosis by the combination with fear, however, as hyoscin has always seemed to him to be a dangerous drug. He knows of nothing against the combination described by Dr. Jack, and he will watch the further progress of the method with interest.

Dr. Stavely had had little experience with the H. M. S. combination, and heretofore has been afraid of it. His attention was first called to it by a gentleman in the Surgeon General's Library, although the combination referred to then was of hyoscin, morphin and cactin; Dr. Stavely had looked up the literature of the subject, and had found the reports unfavorable. He had recently found it necessary to use it in a case of curettage in which ether and chloroform were refused. He had used the H. M. C. mixture in one-half dose, and had been much pleased with the result. Cactin has a very doubtful position, and many observers say that it is inert. The H. M. S. mixture may be a better combination. It has been used in parturition with success; three or four injections in the course of labor will carry a woman through without pain.

Dr. Wellington had had no experience with the narcosis, but has seen some of Dr. Jack's cases and noted the good results. Dr. Wellington wished to call attention to one important objection: the narcosis does not result in complete muscular relaxation.

Dr. Snyder had had a limited experience with H. M. S. narcosis with excellent results. He had not been frightened by the hyoscin, because he had had so much experience with it in an insane hospital in New York; comparatively large doses were commonly given without bad effect. He had had excellent success with the mixture described by Dr. Jack; in one old man it had been used for a difficult herniotomy; he was not completely narcotized, and complained a good deal during the operation, but had no recollection of it afterwards.

Dr. Hasbrouck said that his experience with the combination had been limited. He had seen some of Dr. Jack's cases and had been much impressed with the excellent effects obtained from the narcotic mixture. In the first case in which Dr. Hasbrouck used it, one of curettage, it worked beautifully; in a case of hemorrhoids it worked to perfection; he has used it in a number of other cases; the case of omental cyst reported to the Society recently was operated on under this type of narcosis. He has found no objection to the method; has had one death among the cases subjected to it—a case of pyonephrosis operated upon *in extremis;* the death was in no way attributable to the anesthetic. He would say that the method is very safe, and is particularly applicable to cases in which ether and chloroform are contraindicated.

As to the use of H. M. C. in obstetrics, he had recently heard a very excellent paper upon the subject, read by Dr. Latimer, of Hyattsville, Md. This physician is enthusiastic in his praise of the mixture in labor cases.

Dr. Roy said that as to the physiological action of the drugs composing the mixture, opium is the greatest of all narcotics, and acts entirely upon the brain; hyoscin at first stops motor impulses, and in about two hours the sensory nerves are also anesthetized—this probably explains the necessity of beginning the injections so long before the operation. Strychnin paralyzes the motor nerves, but only in large doses, and never acts on the afferent nerves; its use in the mixture must, therefore, be simply to support the circulation and correct any depressive effect of the other drugs.

Dr. Sprigg has done three operations under the H. M. S. narcosis, in combination with a small quantity of ether, to thoroughly relax the muscles. There had been no cardiac depression, and none of the disagreeable salivation so frequent in ordinary ether anesthesia. The first case was a woman who had been a semi-invalid for 18 years; for the last two years has been a complete invalid. Her blood pressure was constantly subnormal, as low as 90 mm.; it stood at 110 mm. at time of operation. Influenza had been responsible for her condition. The operation lasted two hours, and the patient's condition was satisfactory throughout.

All his cases were only slightly nauseated and were out from under the anesthetic in from one-half to three-quarters of an hour. Hyoscin had rather appealed to him on account of its physiological action. An idiosyncrasy exists in some cases; the drug causes an excitation; this is overcome when more of the drug is given.

Dr. R. S. Lamb said that if the hyoscin is pure no trouble may be anticipated from its use. Scopolamin does at times produce bad effects though it is isomeric with hyoscin. Notwithstanding its identical chemical composition it is a different drug from hyoscin; why it should act differently is not known.

Dr. Hasbrouck had intended to ask as to how old children should be for it to be safe to give them the H. M. S. mixture. The question was suggested by the well known fact that children bear opium badly.

Dr. Glenn I. Jones has had the uncomfortable duty of giving ether after preliminary H. M. S. narcosis; in four cases the patient has come to the operating table in good condition, but after a very little of the ether had been given the pulse dropped out of sight, cyanosis appeared and the patient presented an alarming appearance.

Dr. R. S. Lamb suggested that in these cases not enough hyoscin had been given, but too much morphia.

Dr. I. S. Stone said that much enthusiasm had been shown in

praising the H. M. S. mixture; he begged to recall to the members that ether and chloroform have been used with satisfaction through many years and are agents tried and tested. He felt that the occasion was one to give a word of caution against the reckless use of this new narcotic; the same enthusiasm had been shown for scopolamin narcosis, and the drug had not stood the test of time. He had had unpleasant experiences with hyoscin hallucinations.

Dr. S. S. Adams said that he would like Dr. Jack to say in closing how long after operation death resulted in his three fatal cases. One death had been attributed to shock, but shock is a wide term, and the anesthetic may have much to do with its production. He felt that Dr. Stone's warning was a timely one. What effect might this unstinted praise of a new narcotic have on the young surgeon? Let us get very clear light upon the subject before accepting the method as entirely safe. There have already been two cases of death from these drugs in local hospitals.

Dr. Stavely said that one of the cases referred to was a man who was in a very critical condition at the outset; his death could not be attributed to the anesthetic.

Dr. Frank Leech has had no experience with the drugs from a surgical point of view, but he has used hyoscin with morphin for many years in various maniacal conditions with excellent results and no bad effects.

Dr. Isabel Haslup-Lamb said that in the literature of the subject it is asserted that babies born under H. M. S. narcosis are apt to be cyanotic.

Dr. Vincent said that since having had some unpleasant experiences with hyoscin, he had abandoned its use. He had used it in several cases of exophthalmic goiter, with the hope of controlling the nervous symptoms and tachycardia, but had observed very unpleasant symptoms of cerebral excitation.

Dr. G. L. Magruder said that Dr. Roy had shown why large doses of the drugs can be taken, as they are antidotal to each other; but Dr. Magruder does not feel that it is altogether safe to use the combination. We know that alcoholic subjects bear morphin and hyoscin badly; care must be exercised in such cases. Dr. Jack's cases have been so successful on account of the antagonistic action of the drugs. The H. M. S. mixture is superior to the H. M. C. mixture, as we have no definite knowledge of the nature of cactin. We should not be over enthusiastic in praise of this new narcosis.

Dr. Roy did not wish to be understood as endorsing the drug; he merely attempted to explain the physiological action of its ingredients.

Dr. Stavely had omitted to explain that in obstetrical practice the morphin is left out of the mixture in the second and third injections.

Dr. Snyder had never seen any bad effects from the hyoscin in the insane.

Dr. Jack said that his three deaths were caused as follows: 1st. Pulmonary embolism, four days after operation; 2d. Pulmonary embolism, following chloroform anesthesia for secondary operation; 3d. Shock, 36 hours after amputation of an enormous suppurating and stinking carcinomatous breast.

Chloroform and ether are entirely unnecessary if the patient is tied and allowed to protest at will; patients have no recollection of pain after operation.

Anesthetists must understand that patients who have had the H. M. S. mixture cannot stand a large quantity of ether or chloroform, nor do they need it.

He referred to the excellence of the H. M. S. narcosis in operations about the mouth and jaw.

In hospital practice the mixture is economical in cost and time, as the administration of the drug can be timed so as to have the patients ready for operation in rotation.

CASE OF CALCULUS OF THE URETER.*

By GEO. TULLY VAUGHAN, M. D.,

Washington, D. C.

The specimen was a stone of enormous size, probably the largest calculus of the kind ever removed from a ureter. The patient, a woman of 33 years, was referred to him by Dr. Owens. Three years ago she had been operated upon at Columbia Hospital by Dr. Bovée; the record at the hospital shows that a calculus had been removed from the right ureter. She had good health after that operation until one month before coming under Dr. Vaughan's care, when she had a well-defined attack of renal colic. There had been constant pain with acute exacerbations, accompanied by high fever. By vaginal examination, the stone could be easily felt, and it was removed by an incision through the vagina into the ureter. The patient did very well after the operation.

There are three places where ureteral calculi are most apt to lodge: in the first three inches of the ureter; at the pelvic brim; within an inch or two of the bladder. Statistics indicate that in

*Reported, with specimen, to the Medical Society, November 6, 1907.

about 50 per cent of the cases the stones lodge near the bladder; one author holds that in a large percentage of cases the stone will be found near the kidney.

Dr. D. S. Lamb asked if there had been any thickening of the ureteral wall; and if there was any suspicion of cancer in this case.

Dr. Hickling inquired what was the condition of the ureter and kidney above the calculus.

Dr. Vaughan could not say whether the ureter was thickened or not, as the operation was through the vagina; there was no suspicion of malignancy about the case. The ureter was much dilated above the calculus; the kidney was in good condition, judging from the way it has acted since the operation. The stone weighs 915 grains, measures $2\frac{1}{2}$ inches in length, $4\frac{3}{4}$ inches in circumference.

CASE OF ANEURYSM OF THE AORTA.*

By F. E. HARRINGTON, M. D.,

Washington, D. C.

White man, age 52, came under observation Nov. 1, 1907. Family history negative. Syphilis denied. Has been a hard-working man up to twelve years ago. Has had three attacks of articular rheumatism since 1895, the last in 1903, each lasting some time. When seen by me he complained of pain, since February, of a boring character, first on the right side, then on both sides, in the lumbar region, and radiating forward and downward. At no time was he free from pain. Has lost fifty pounds in weight since March. Appetite, fair; food, limited to small quantities. Sleep, poor.

A pulsating expansile tumor was found directly below the arch of the costal cartilages. This mass had a distinct thrill and a systolic murmur which was transmitted down the aorta and could be heard at the right of the tenth and eleventh dorsal vertebrae. The femoral, popliteal and posterior tibial pulses were normal. I examined the patient again on the second and the fourth of November, and made a diagnosis of aneurysm of the abdominal aorta involving the coelic axis. The next day a consultation was

* Reported, with specimen, to the Medical Society, November 20, 1907.

held with Dr. Sterling Ruffin, after which the patient was sent to the George Washington University Hospital. Urine examination negative, and a leucocyte count showed 13,200 white cells.

On the eighth an anesthetic was administered and the patient examined; Dr. Ruffin present. The heart was in good condition, the previous examinations verified and my diagnosis confirmed. On the ninth Dr. J. R. Wellington saw the case with Dr. Ruffin and myself, and confirmed the diagnosis but would advise no surgical interference. A blood count showed: red, 4,700,000; white, 12,200; hemaglobin, 90 per cent.; blood pressure, 115.

The patient was placed upon "Tuffnell's" diet, kept in bed and given progressive doses of potassium iodide. At no time was there any fever, and the pulse ranged from 84 on the 5th to 104 on the 17th, maximum reading, of less volume and lower pressure. On the morning of the 17th he was found dead by the nurse, who had left him only five minutes before to get him a morning paper, and after receiving a report from the patient that he felt better than he had for many days, was practically free from pain and had had a good night.

At the autopsy the abdominal cavity was found normal, the stomach pushed well up into the right quadrant. The right pleural cavity contained a large blood clot almost completely filling it, point of rupture of the aneurysmal sac posteriorly. The aneurysmal sac was bound down to the spinal column, and the bodies of the 9th, 10th and 11th dorsal vertebrae were eroded. The sac showed some organized clots in its lower portion and was about the size of a child's head at term. The foramen leading from the aorta into the sac was about 1¼ inches in diameter. The rupture took place at the point of adhesion of the sac with the diaphragm. The coeliae axis was not involved. Dr. E. P. Copeland assisted at the autopsy.

Nostrum Advertisements in Medical Papers.—The public at large has been writing to its newspapers insisting that those nostrum advertisements shall stop; the church people have been writing to their papers; the farmers have been writing to their papers—all classes of the public have been busy; all classes, gentlemen—except the physicians.—Bok, in *Jour. A. M. A.*

CHOREA, WITH ESPECIAL REFERENCE TO ITS ETIOLOGY.*

By JOSEPH S. WALL, M. D.,

Washington, D. C.

It may not be amiss that I present tonight for your consideration a disease of such ordinary occurrence as chorea, for in the light of modern investigation no little progress has been made in clearing away the fabric of doubt and theory which has enveloped this malady in a network of vagaries, as fantastic, perhaps, as the abandon which marked the progress of any dancer in the procession of Saint Vitus.

Nor has the last word been said concerning many disputed points in the etiology, pathology and treatment of chorea, although recent years have known many earnest workers whose labors are bearing the fruit of conscientious effort, the effect of which has been to narrow the chasm between theory and fact, and the dissipation of much that has been mere speculation, by the substitution of data which, though scanty, have been impressive.

It may be remarked that the study of chorea presents difficulties which are at once apparent. Rarely is the disease fatal *per se*, so that in consequence material for pathological investigation is but limited; nor does the body of the nervous, irritable victim lend itself as kindly to methods of clinical research which are productive of so much in later adult life. But notwithstanding these shortcomings, it may be well to take note of what *has* been accomplished in late years.

We have seen pneumonia and acute rheumatic fever but recently classed under the acute infectious diseases, nor is it at all improbable, that in the near future chorea may be so classified—and perhaps it will occupy a place near that of its close relative, rheumatism, or, as some would have it, an integral part thereof.

To me there has always been a personal factor of intense interest in the phenomena presented by this disease—with its array of purposeless movements and that peculiar predilection for involving the heart—a relationship at first sight of striking incongruity; but if we adopt the teachings of our English cousins, this

* Read before the Medical Society, December 11, 1907.

duality of symptoms can have but a common basis, a contention, in the light of evidence adduced for its support, that has proven the most tenable presented in the domain of theory which controls as yet the etiology of this, as well as many other diseases, which rest in the haze of speculation.

Time will not permit a detailed consideration of the disease in question, and consequently I have devoted more attention to the etiology and pathology of chorea, to its relation to rheumatism and to vascular states common to the latter disease, and to a special word concerning the treatment of this malady, in view of advances recently made in the branches of study enumerated.

Of the varions theories in regard to this disease, there are three that have attracted a considerable following. The first, that chorea is a functional disease of the brain, characterized by an instability of the brain centers or of the association tracts by which these centers are normally controlled. Such a view regards the choreic individual as possessing a brain which in its perversion gives rise to explosive discharges comparable to the incoordinate movements of the new-born child. To one who watches the meaningless muscular contractions of the infant, and compares them with the equally purposelèss movements of a choreic child, the resemblance is striking. In the former one meets with non-developed association centers and with immature myelinization and education of association tracts ; in the latter there is a faulty action of these same cortical cells, or, perhaps, the subcortical tracts, but through what agency this is accomplished remains yet to be determined.

Kirkes has advanced the embolic theory, which has been supported by Rosenthal and later by Money, who succeeded experimentally in producing chorea in animals by injecting fine particles into the carotids. Such a theory, however, presupposes the invariable presence of endocarditis in chorea, which is not borne out by the facts and has therefore failed to attract many to its support.

But the pathogenesis of chorea has been the food for speculation for years, and here, as elsewhere in medicine, the scarcity of concrete knowledge has been productive of theories as widely different in principle as they are in the unification of the pathological agency to which the malady may be due.

The infectious theory, and under this grouping the rheumatic

theory, has been advanced by recent writers, especially of the English and French schools.

The neurotic theory had stronger claims to the credulity of clinicians, and has in the present day many firm advocates who insist upon the relation of chorea to nervous shock, fright, overstudy, eye strain and the like, together with its occurrence in the formative period of adolescence. By some, Charcot being the most outspoken, even the arthritis itself was attributed to a nervous cause.

But in opposition to this view Osler states that in a large majority of cases no close connection exists between the fright and the onset of the disease, and he believes as well that reflex irritation plays no important rôle in the production of the disease. According to DeSchweinitz ocular defects do not occur in greater proportion in choreic than in other children.

Collins and Abrahamson state that temperament is of no etiological importance and that their statistics in no way show that chorea is more common in excitable children. These writers further state "that the inconsequential part played by reflex irritation such as masturbation, eye strain, etc., either predisposing or exciting, is shown by the fact that in none of their cases was such a history elicited or relationship traceable."

If we consider rheumatism as an infectious disease, the infectious theory would include this in its grouping; nor is there much likelihood, in view of recent researches, that acute rheumatic fever will be refused a place among the infections by the impartial observer.

If, therefore, we consider chorea as among the latter, there may be brought to the support of this contention considerable data, both the growth of clinical experience and the product of laboratory research, the purport of which is to place the etiology of this disease on a firmer basis than heretofore and to as strongly predicate its dependence upon a specific infectious agency. Whether such will prove to possess a specificity of its own or to become merged with that of rheumatism, further research will in time no doubt reveal.

There may be noted in support of the infectious theory the influence of age and season; the association of chorea with other infections; its intimate relationship to rheumatism; the undoubted infectious character of fatal cases, and the frequency of endo-

carditis as a complication of this malady. Lastly, the researches of bacteriologists, while necessarily limited because of the meagerness of material, have been fruitful of results which must attract attention in solving the etiological factor of this disease.

If these factors concerning an infectious basis be studied it will be found that chorea occurs during that period of life when a marked predisposition is shown to infections.

The average age of patients may be judged by the following: Mackensie, thirteen years. Holt, seven to fourteen. Starr, five to fifteen.

According to Lewis the frequency of chorea reaches its lowest curve in November, rises rapidly in December, remains stationary in January and February, mounts still higher to its acme in March, falls in April and then gradually declines to its starting point in November.

More striking from a clinical point of view, and what bids fair to be further confirmed by pathological methods, is the intimate association of chorea with rheumatism. A hundred years ago Heberden noted that chorea had been preceded by "stiffness and pains in the knees." Bright, in 1802, recognized the relationship, though Bouteille, in 1820, first pointed out clearly the relationship between these two diseases. The English writers of recent years have been the most ardent advocates of what might be called the rheumatic theory, and one, especially distinguished by the courage of his convictions, has been Sir Dyce Duckworth, of London. In the International Congress at Rome, in 1894, he not only urged the contention that there existed such a close relationship between rheumatism and chorea, but even that the two were of identical etiology, and under his able championship there has been coined the term "cerebral rheumatism." Eighty-five per cent. of his personal cases showed a family or personal history of rheumatism.

An analysis of statistics of other observers gives varying percentages, but it must be granted that a marked association does exist, and no doubt the percentage of rheumatic taint varies with the care with which this etiological factor is traced—not only in the previous history of the individual, but, as we shall see, in the subsequent progress of choreic patients.

That the personal equation is present in such investigations by the clinician there can be no doubt. Some consider as an evi-

dence of former rheumatism those vague sensations of childhood called "growing pains." By others (Collins and Abrahamson), three types of antecedent infection have been considered rheumatic, namely, the tonsillar or anginous, the arthritic, and the cardiac. In 100 cases studied by these observers, there was a history of tonsillar rheumatism in 23, articular in 16 and cardiac in 32. There were five cases of cardiac involvement with no rheumatic history.

The following are the statements of a few pediatrists who have studied the relationship of the two diseases:

In a discussion arranged by the council, before the American Pediatric Society in Boston, in 1892, Townsend presented a chart much like that of Lewis, showing, however, a rise in the number of cases in October, which he attributed to the resumption of school duties. Of 148 cases there was a history of rheumatism in 21 per cent.; of heart murmur in 30 per cent; and of organic heart disease in 14 per cent.

Crandall, in the same discussion, calls attention to the fact as stated by Jacobi, that pediatrics does *not* deal with miniature men and women, with reduced doses and the same disease in smaller bodies. He points out in agreement with this thought, that rheumatism is a disease that manifests itself very differently in the child and in the adult. In his cases complaining of growing pains, only those were included in the statistics which showed confirmatory symptoms, as recurring urticaria, tonsilitis, or cardiac murmur.

In 88 cases his histories were complete and satisfactory, and of this number there was a history of acute rheumatism in 16, of subacute in 12, and of growing pains in 6, or 34 in total. Antecedent arthritis was therefore present in 31.8 per cent., and concurrent in 20.2 per cent.

In the same discussion, Allan Starr reported 385 cases with a rheumatic history in 18 per cent., but this percentage is based upon a definite history of acute articular rheumatism.

Crandall and Holt report 146 cases, 63 suffered with rheumatism. Fischer reports 100 cases, 25 suffered with rheumatism. Sinkler reports 279 cases, 37 suffered with rheumatism. Tylden reports a history of rheumatism in 50 per cent. of cases. The Collective Investigating Committee of the British Medical Association, 25 per cent. In 88 of Osler's cases, 15 per cent. gave a

history of articular swelling, acute or subacute. In 33 of his cases there were pains, sometimes described as rheumatic, in various parts, but not associated with joint trouble. If these be regarded as rheumatic, the percentage is raised to nearly 21.

By far the most interesting statistics on this point, are contributed by Baxter in the *Lancet* for 1898. In the Great Ormond Street Hospital, London, which has a wealth of material, he studied 115 cases, which showed rheumatism in 37, or 32 per cent. No history of such was obtained in the remaining 78, but these cases were carefully followed up, and after the expiration of three years, of 57 recorded, 13 had developed rheumatism, raising the percentage to 43.5 per cent. Three years later, six years in all after the original study, he attempted to follow out the remaining 44 cases, of which 29 could be traced. Of these 29, 10 had developed rheumatism and one had died of heart disease. Therefore, 53 per cent. at the end of six years had shown rheumatism, as against 32 per cent. in the original histories.

The adherents of what we might term the "rheumatic school," limit the effect of shock, fright, emotion, over study and the like, to the lowering of bodily resistance, especially the lowering of vitality of the nerve centers, and hence the advent of rheumatic infection results in chorea. As expressed by Lees, "if a child in the rheumatic state is exposed to a chill or wetting of the limbs, arthritis will follow; but if to a mental (cerebral) shock, chorea."

Collins and Abrahamson call attention to the frequent hypertrophy and dilatation of the heart, with accentuation of the first apical and second pulmonic sound, and suggest that these are frequently the indications of a previous rheumatic dyscrasia.

In line of this same thought, according to Lees and Pyles (*Roy. Med. and Chir. Trans.*, 1898), "in first attacks of rheumatism and in first attacks of chorea there is not seldom to be observed a distinct degree of cardiac dilatation, sometimes independent of pyemia, parotitis or appreciable endocarditis."

In this disease, as in others, a final word is asked of the bacteriologist, and no little attention has been devoted to the bacteriology of chorea, although such research is handicapped by the paucity of material.

Some difference of opinion prevails among bacteriologists as to the exact species of bacteria isolated in fatal cases. Wasserman

claims that it is a streptococcus; Poynton and Paine, a diplococcus; Singer, of Berlin, believes that the disease is an attenuated form of pyemia due to various pyogenic organisms, streptococci and staphylococci.

Wasserman, in 1899, produced with constancy a polyarthritis in rabbits by the experimental inoculation of a diplococcus that he had isolated from the cerebro-spinal fluid and inflammatory exudations of a patient dead from acute rheumatism and chorea.

In 1900 Poynton and Paine confirmed the observations of Wasserman and further demonstrated a diplococcus in the pia mater and brain of a fatal case of chorea. In that year they also found that incoordinate movements might result in the rabbit from the intravenous injection of the diplococcus. This, in turn, was confirmed by Meyer and Beatty.

In December, 1905, Poynton and Paine published an investigation illustrated by plates showing the micro-organism in the pia mater of a case of fatal chorea and reported another case in which they had succeeded in demonstrating its presence. In one of these the diplococcus had been isolated from the cerebro-spinal fluid and had produced arthritis, endocarditis and pericarditis in rabbits.

From the results of this work these investigators formulated the following working hypothesis: "That rheumatic chorea is probably the outcome of an infection of the brain and its meninges with the diplococcus rheumaticus; that it is, in the words of Sir Dyce Duckworth, a 'cerebral rheumatism.'"

From the remarkable results achieved by these workers, Poynton, Paine and Holmes, I feel that a discussion of the association of rheumatism with chorea would be incomplete without a brief review of their findings in those cases which fell into their hand for investigation because of a fatal issue.

They state that in a majority of rheumatic lesions, if the investigator is fortunate, the bacterial agent will be discovered, although it is rapidly taken up and destroyed by the leucocytes and living cells of the tissues, and, on account of its minute size, requires careful research. The connective tissue changes are hardly likely to be prominent in the brain, for this is essentially composed of nervous elements and a special supporting tissue—the neuroglia. Nevertheless, in other organs where there is a connective tissue basis holding together the functional tissue,

the evidence of the rheumatic poison can be traced not only in the former, but also in the functional tissue. In the myocardium, for example, there may be found profound degeneration of the muscle fibers. This provides a useful guide in the investigations upon chorea as to the possible nature and position of the organic lesion.

In the *Lancet* of last year (1906), Poynton and Holmes add three more to the recorded observations of the presence of a diplococcus in the pia mater of cases that have proved fatal while suffering from chorea. This organism has been demonstated in the brains of these cases, lying in the perivascular spaces and connective tissue. It might be well to note as well, that they have demonstrated in a case of chorea which occurred in a first pregnancy, lesions similar to those that were found in the rheumatic cases.

Their first case was that of a girl aged seven, occurring in the service of Doctor Batty Shaw, in the University College Hospital, and was one of unusual severity. A pure growth of diplococcus was obtained from the heart's blood by Thiele, the hospital pathologist. Its presence was demonstrated in the pericardium by the house physician; it was again recovered by the writers in the brain and pia mater, and, on cultivation by Dr. Paine, was injected into animals, producing multiple arthritis and pericarditis of the usual type. *Five different observers* in this case recognized the occurrence of a diplococcus which had the features of the diplococcus described in rheumatism. On pathological examination of the brain there was found engorgement of the vessels of the meninges and cortex. Sections of the cortex stained with hematoxylin revealed great congestion of the bloodvessels of the membranes and of the brain itself, and in many places small hemorrhages were visible, especially on the under surface of the pia.

"A small proportion of the vessels of the pia-arachnoid, generally the smaller arteries, were thrombosed, especially over the convexity of the hemisphere, and there was in places definite evidence of serous exudation and small round-cell infiltration into the membranes in the immediate neighborhood of the vessels. Thrombosed vessels were still more common in the cortex and subcortical white matter, but in the majority the clots seemed to be quite frequent, though some were partially organized. There

was also small round-celled infiltration into the sheaths and perivascular spaces of many of the vessels which were not thrombosed. Thrombosed vessels could be occasionally followed into or be found within small areas of softening. The pathological changes enumerated were equally marked over the whole hemisphere and within the basal ganglia, but no foci of necrosis were observed in the cerebellum, pons or medulla, though here, too, there was considerable congestion of the vessels and frequently small round-cell infiltration into their sheaths."

Poynton and Holmes studied most carefully the altered changes in the nerve cells of the cortex and their reaction to various staining materials. Among their findings were noted a swelling and distention of practically all the cortical cells, with a disappearance of their tigroid so that they stained diffusely, or at times almost uniformly.

In some there was extensive perinuclear chromatolysis, and their nuclei were swollen and eccentrically situated. A small number of cells were still more severely affected; their outlines were scarcely recognizable, their nuclei were shrunken and deformed, and no staining substance was visible in them.

"Bacteria were found in the pia; the majority appeared as isolated diplococci of small size, but frequently larger groups of micrococci, many of which lay in pairs, were visible, and occasionally a single micrococcus. The morphological characters of the micrococci were in every place the same. Similar diplococci were found in the brain itself, but only in the loose connective tissue surrounding the vessels and in the perivascular spaces. This diplococcus was also recovered from the vegetations on the heart valves, and from the pericardium; and on culture and inoculation into animals produced arthritis and pericarditis."

Their second case, coming to autopsy, in a boy of fourteen, revealed practically the same pathological findings. Bacteriologically, the diplococci were even more numerous than in case one.

Their third case, a woman of 21, dead from chorea of pregnancy, showed vegetations on the heart valves identical with those of rheumatism, although there was no history of such. The vascular changes in the brain were less in degree, though similar in kind, to the other reported cases, but the affection in the nerve cells was considerably greater.

To recapitulate in brief the conclusions of these writers, we

find that they assume, as a result of their research, that a bacterial toxin is at the basis of the vascular and nerve changes constantly found in the studied cases. As to whether this toxin is produced at the site of the nerve lesions, or reaches the nervous centers through the blood or lymph stream—their answer cannot be categorical, although they are inclined to the belief that the presence of micro-organisms in the brain substance would point to a direct invasion of this part of the organism by the bacteria causing the disease. The occurrence of hemichorea also makes a local infection probable, as unilateral symptoms can be scarcely attributable to a general infection.

In regard to the association of rheumatism and chorea they have this to say: "At the present time there is evidence upon both sides, but the bulk of it strongly favors the view that chorea is mostly rheumatic, and that when chorea occurs without any history of rheumatism, it is presumably the primary rheumatic symptom, and in practical medicine is best looked upon as a stamp of rheumatism."

Some light may soon be thrown upon the bacteriology of this disease by careful blood cultures, and in this country Leonard Hirshberg, of Baltimore, succeeded in recovering micrococci which grew in short chains or pairs in two out of three cases submitted to this test.

Because of lack of time, but a brief word can be said of the symptomatology of chorea, although the observation of choreic movements, of their extent and complexity, is fascinating. Chorea, when fully developed, is one of those diseases diagnosed by a glance as the patient enters through the dispensary door, but if such cases were recognized in their incipiency, and were subjected to regulation and treatment in this early period, great good would be accomplished in limiting the severity of the disease and in disarming it of many of its baneful legacies, especially those which relate to the vascular system.

Thus the parent or teacher may recognize the first slight aberrant symptoms, mostly by the child's inattention, impaired mental faculties, change in disposition and temper, and restlessness, or what the mother often calls "fidgitiness." Eating utensils may be dropped or havoc played among the china while at meals, and only too often these early manifestations of chorea pass unrecognized as indications of disease, but a cure is sought in punishments which work still greater evil.

A case showing these primary symptoms was admitted to my service in the out-patient department of the Children's Hospital within the past week. This boy, aged eight, was presented by his mother, who said that his school teacher had written her a note stating that the pupil was restless while in class and was constantly laughing or, as we found by questioning, grimacing, though no causes existed for such untoward action on his part. The boy was physically well developed and gave no rheumatic history, and an examination of the heart, lungs and other viscera was negative. Incoordinate muscular movements were plainly visible, however, on careful observation. These involved the tongue, the muscles of expression, especially those about the mouth, and the flexors and extensors of the fingers. All such movements were intensified by voluntary attempts to produce coordinate acts, but might have been readily overlooked in a cursory examination.

There may be only slight incoordination of voluntary movements, or awkwardness, but in the severe forms of the affection the jerky, irregular movements may become general, so that the patient may be unable to get about, or feed or clothe himself. In some of these extreme grades the child may with difficulty be kept in bed because of the severity of the contractions. It might be well to note that there is often sudden muscular relaxation as well as contraction, and this is explicable upon the ground that voluntary muscles are supplied with neurones, whose function it is to cause relaxation, as has been shown by Sherrington and other physiologists, especially in balanced muscles, so to speak, as in the various opposed flexor and extensor groups. There is as well, always a certain degree of paresis or asthenia, in some cases amounting to actual paralysis.

But it is the heart particularly that arrests our interest in considering the symptoms of chorea, for here we find conditions of serious import, and in the great majority of fatal cases the involvement of this organ causes the death of the patient.

Addison first called attention to the liability of chorea to affect the heart. Gowers found heart lesions in one-third of his non-rheumatic cases and in three-fourths of those giving a history of rheumatism. A systolic murmur heard at the apex and transmitted along the left border of the sternum does not necessarily indicate endocarditis; but such a murmur, if harsh in quality

and transmitted toward and into the axilla, and if associated with tachycardia or dyspnoea, is evidence of endocardial infection. Even if no murmur be present, actual dilatation of the heart with disordered function may be made out by palpation and percussion. Attention has been called by several observers to this myocardial disease, such as one sees in diphtheria, for instance, and has been confirmed by autopsy findings.

It is in the heart that chorea leaves its lasting stigmata, although years may elapse before the mischief of sclerotic change makes inroads upon the health of the victim. But this serious effect of chorea upon such a vital part is not to be belittled even in the acute stage, as the following illustrative case will show.

Dorothy P., age three and one-half, was seized with chorea during the summer of 1905. The child had never been to school, nor was there any history of fright or nervous shock, although she was extremely neurotic and active and was the companion of her two older sisters in all their play. The disease was very severe and was both preceded and accompanied by painful, enlarged joints. When I was first called to attend her she had heart dilatation and endocarditis, but under bed rest and arsenic the choreic movements totally disappeared, yet the systolic murmur persisted. The heart apparently regained its normal size in spite of the presence of murmur, nor was the child in ill health until March, 1906, when the choreic signs set in with great violence. She was immediately put to bed and treatment commenced. Within two weeks there was an abatement of the muscular contractions, but the heart symptoms became more prominent, dyspnoea became marked, the apex beat extended two fingers beyond the nipple and attention became centered entirely in this cardiac involvement. In the third week of her illness, about seven in the evening, signs of acute dilatation supervened, the dyspnoea became intense and distressing to witness, cyanosis appeared and death occurred within two hours after the advent of these alarming symptoms. There was no autopsy.

So it would seem that the chorea of Sydenham is not the trivial affection in the light with which it is viewed by some; even the acute stages are fraught with dangers, and if such are masked in this period their entail upon the heart may be only too apparent in future years.

Osler found in 140 patients examined over two years after the

attack, a normal heart in 51 ; in 17 there was functional disturbance, and in 72, *over half of his cases*, there were signs of organic heart disease.

Now a word as to treatment. In chorea, as in so many other diseases, the duty of the physician should be to anticipate as well as to combat the symptoms of this malady.

No one can disparage the causative factor of mental worry and stress incident to the competitive systems in vogue in the school of the present day. The evils of forcing young, immature minds have been universally recognized of late years, even by the disciples of pedagogy under whose enthusiasm these pernicious influences have been developed. The agitation for medical supervision and inspection of school children has resulted in the institution of such professional service in most of the larger cities of this country, and the reports of these inspections, which are accumulating, are convincing in pointing out the necessity of reform in the modern forcing methods of education.

A child of unusual precocity—the bright, active-minded offspring of the proud, ambitious parent—is that individual who, by excessive schooling, is laying the foundation for the development of chorea and of many maladies of equal harmfulness. And so in the present day, when the family physician is also, very wisely, the family adviser, the most careful supervision should be maintained over neurotic children, or even those possessing strong neurotic family taint, and the ambitions of parent and of the eager child should be held in restraint. Such children, at the first evidence of overtaxing of mental or physical strength, should be removed from school. Fortunately the average school teacher of today is more alive to the harmful effects of over study than heretofore, and largely as a result of education by the warnings of the medical profession and by the enlightenment of advanced educators who have begun to realize their sins of commission.

The treatment of the attack resolves itself into general hygienic measures and rest in bed, and in the cases accompanied with heart involvement, this confinement to bed in a recumbent position should be insisted upon. In many cases an immediate betterment of symptoms will be observed on instituting such measures, so that the administration of drugs plays but a minor rôle in treatment. Children who have often shown tardy improvement in dispensary treatment will at ance improve when admitted to

the hospital ward, and in but the milder cases, or those well started toward convalescence, should treatment in the outpatient department be attempted.

The list of drugs advanced for the treatment of this disease is possibly only exceeded in length by those advocated for pertussis. Among such may be mentioned the bromides, valerian, belladonna, chloral, morphin, antipyrin, aspirin, oil of wintergreen and, lastly, arsenic, which has been singled out of the polypharmacy of this disease as a medicinal agent of more or less specific nature.

Arsenic is usually to be administered in the form of Fowler's solution, for in this way the dosage can be accurately regulated and its untoward effects can be guarded against and the degree of individual tolerance can be more easily established. It has not been my personal experience that the enormous doses recommended by some pediatrists are in most cases needful to obtain the beneficial effects of this drug. I have rarely exhibited over ten drops of Fowler's solution, although many would give as high as twenty-five minims until the effects of saturation are produced. Clinical experience has shown that this remedy, is most potent of all in the treatment of chorea.

In the last few years, however, especially by the English pediatrists who have been actuated by the influence of the rheumatic theory of the origin of chorea, the use of salicylic acid and its derivatives has gained a large following. The oil of wintergreen has been given by Italian physicians, but in the large London clinics the salicylate of sodium is chosen most frequently, and, from what I could gather last year, its employment in the treatment of chorea is almost universal among the pediatrists of that city. Even if the drug treatment does not consist of the salicylate alone, it is used in conjunction with arsenic, and, according to many, this combination of drugs is more efficacious than their individual administration.

It has recently been my practice to give the true salicylate of soda in all cases of chorea, and in several instances where this preparation alone has been used the improvement has been rapid.

A case admitted to the children's ward of the Providence Hospital during the past summer, showing a severe type of the disease so that the child had to be fed by the nurse for several days after admission, was put upon the salicylate of soda, in conjunc-

tion with absolute bed rest. The patient was a girl, aged eleven, who gave no distinct rheumatic history, but an examination of the precordial region revealed a loud mitral regurgitant murmur, transmitted to a limited extent to the axilla. The heart projected just beyond the nipple, and there was acceleration of the pulse. Within three weeks this endocardial sound had entirely disappeared, even before the choreic movements had cleared up. Such a circumstance is contrary to the general experience in these cases, and one might be constrained to believe that the adventitious heart sound was functional in character, though such is not my personal view. In this connection, I would draw attention to an observation by Holt, that he had learned to be very suspicious of the cases of functional heart murmurs in chorea. It seemed to him that every year this number of functional murmurs was growing smaller, and it might be well to add that Holt made this statement several years ago.

Whether the disappearance of the heart lesion in this girl while under salicylate treatment within such a short space of time was a mere coincidence, I am unable to say, but if solely a coincidence, it was a striking one.

I have no conclusions to present as a result of this brief analysis of chorea, but I *do* believe that a disease of its importance, possessing, as it does, such malignant tendencies toward the involvement of vital organs, warrants more attention than it ordinarily receives—especially in the matter of prophylaxis and rigorous regimen during the treatment of the acute attack.

Dr. Hickling said that all physicians who have had to deal with chorea must have had their attention called to its association with rheumatism. While the bacteriology of both rheumatism and chorea is still unsettled, the streptococcus of Sanger seems to have good grounds for argument in its favor. Wherever a point of weakness exists, an organism may set up lesions, and the same organism, where weakness exists in the joints, may occasion articular rheumatism; where the weakness affects the heart, it may occasion endocarditis; where the weakness affects the brain, it may occasion chorea. Bad surroundings, stress of school work, etc., must be only secondarily causative. In the course of chorea, it should be borne in mind that the accompanying anemia may be the cause of heart murmurs rather than any lesion of the endocardium.

Packs and rest, without other treatment, may do much good in chorea; one woman at Providence Hospital who could not

take arsenic, got entirely well under baths, packs and salicylates.

Dr. Wm. A. White said that we must all accept the infectious etiology of chorea. The term chorea is much abused; all sorts of conditions are called chorea which are not Sydenham's chorea at all; such as Huntington's chorea, facial and other tics, etc. These last named affections have nothing in common with Sydenham's chorea. It would be valuable to discover finally and without question the specific cause of chorea, so that the other conditions mentioned might naturally fall into their proper places.

Dr. Williams inquired what the writer means by functional heart murmurs? A murmur which makes its appearance in the course of a disease and then disappears? Recent pathological studies in rheumatism indicate that murmurs heretofore called functional may not be functional at all, but truly organic and due to myocardial and pericardial changes. In autopsies upon bodies dead of rheumatism, he has seen myocardial changes much greater than the endocardial lesions. Some cases show an enlargement of the aortic orifice. Unless the original disease producing the murmur is endocardial and permanent changes in the valves take place, then with recovery the murmur will disappear, and so will simulate what has been regarded as functional murmurs.

As to the differentiation of Sydenham's chorea from other tics, he had seen cases which were said to have been cured by psychic treatment alone; such cases illustrate two points: that some cases of mild Sydenham's chorea may recover spontaneously, while others are in reality imitative spasms.

Dr. Acker said that the fact that such a large percentage of cases of chorea occurs in run-down girls of poverty-stricken, alcoholic parentage makes him think that the disease is due to some nutritive disturbance of the motor centers. But its relation to rheumatism cannot be ignored, and its acute course, tendency to heart lesions, and definite duration are strong evidence of an infective cause. The treatment should consist for the most part of rest, good food and good hygiene; large doses of arsenic are not necessary, tonic doses will suffice.

Dr. Taber Johnson called attention to the chorea which occasionally attacks pregnant women. He has had one such case in a woman who had had chorea in childhood; she had such violent movements that she could not feed herself and could hardly be controlled in bed; she aborted, with immediate cure of the chorea. Dr. Robert Burnes had read a paper in which 53 cases of this kind were analyzed; 17 of these aborted and were cured, a large percentage died. He asked Dr. Wall to give a reason for its appearance in pregnancy and its cure by miscarriage.

Dr. Hickling asked if any members present had seen living children born of choreic mothers; if so, what was their mental condition.

Dr. Fremont-Smith said that the effect of the toxins of rheumatism and chorea, as well as the toxins in all other diseases, upon the myocardium and the media of the arteries should receive very careful attention. As to the heart murmurs in chorea it is quite possible for a myocarditis to occur with dilatation and relative insufficiency, thus occasioning a murmur in the absence of endocarditis.

With regard to the arterial media the studies of many investigators indicate that medial disease is frequent after toxemias. Dr. Ashford in his studies of uncinariasis has shown that disease of the media and myocardium may occur in young patients early in the disease ; when autopsied later it could be seen that recovery had taken place. Hence it may be seen that myocardial changes may occur in all infections, with subsequent recovery.

Dr. Acker claimed for Sturges, of London, the credit of first pointing out the relation between chorea and rheumatism.

Dr. J. D. Thomas said that as to the cardiac lesions in chorea, there is a clinical and a pathological side to the question. It is more and more being shown, however, that the heart may be badly involved in chorea. As to the pathological side, choreic hearts can be seldom studied because most patients get well. There are a number of cases on record, however : Babcock reported 16 cases from Guy's Hospital ; 14 of these showed cardiac lesions. Raymond has done 79 autopsies in chorea ; in persons dead of simple chorea, he concludes, 1, that lesions of the brain and heart are most common ; 2, both the brain and cord are usually involved ; 3, after simple engorgement of the brain, softening is the next most common finding. As to the bacteriology, a French bacteriologist advocated a diplococcus as the cause as long ago as 1891.

Dr. Wall thanked the members for the discussion, particularly Drs. White and Williams, for pointing out the loose use of the term chorea. By functional murmurs Dr. Wall means those transient murmurs commonly believed to be due to hemic changes and usually not transmitted ; personally, he believes that in most instances some organic change is responsible for the bruit. As to parturient chorea, there are two theories of etiology, the neurotic and the infective. It probably is not true Sydenham's chorea. Poynton and Paine have, however, found their diplococcus in one case.

Popular Lectures by Doctors.—No nation can rest secure which has not some regard for the sanitary essentials by which the public health must be safeguarded. One of the most salutary ways in which our profession can help the community is in demonstrating the application of scientific principles to the ordinary humdrum of everyday life.—*Jour. A. M. A.*

ANNUAL REPORT OF THE COMMITTEE ON PUBLIC HEALTH, DECEMBER, 1907.

Read by title, December 18, 1907, and ordered to be printed.

In presenting this report, your committee desires to say that the data here compiled and made available (in the absence of morbidity of statistics which either do not exist or, if they do, are entirely too meagre), are as complete and reliable as can be obtained, and that if the conclusions based thereon are measurably correct there is ample compensation, it is thought, for the time and labor devoted to the task. But whether the conclusions are correct or not, we feel assured that the matter possesses sufficient interest to engage your attention for the time being, and particularly do we feel so when we reflect that one of the objects of the Society (and not the least) is to encourage the presentation of papers for the benefit of the presenter himself.

As extenuating circumstances, in explanation of the unprecedented delay in presenting the report, your chairman begs leave to invite your attention to the fellowing :

First, the great difficulty and long delay in obtaining the necessary data upon which to base a report ; second, the great difficulty, almost impossibility, to unite and render effective the abilities of the different members of the committee upon such a task ; third, the many unavoidable interruptions and petty annoyances incidental to any such task, when undertaken by a practitioner of medicine ; fourth, the Herculean task of the undertaking itself ; fifth, the difficulty of condensing the report so as to make it available for presentation to the Society. So numerous and monumental were the columns of figures and so varied were all their possible combinations, that your chairman more than once felt he had at last found his life work, and so difficult did it seem to prove any one thing, that he more than once found himself conscientiously regretting that figures had gained such a lasting reputation for veracity, and felt more like declaring that statistics can be made to prove nothing, rather than like subscribing to the trite saying that they can be made to prove anything.

In this connection, your chairman desires to acknowledge his indebtedness for material assistance to the other members of the Committee, and particularly to Dr. Wood, who not only worked

out the annual rates of mortality for each city, but submitted a very complete report for Cincinnati, as well.

The principal object of this report, which is based upon the mortality statistics of scarlet fever, diphtheria and measles in ten American and six European cities, is to determine whether or not municipal quarantine has reduced the mortality from these diseases.

It will readily be seen, however, that the tables and charts, which are important features of the report, reveal many facts valuable, no doubt, for other purposes. The statistics upon which the tables and charts are based were obtained, principally, from the Thirty-second Annual Report of the Health Department of the City of Boston, Massachusetts. However, the Health Departments of New York, of Providence and of Cincinnati, each furnished mortality statistics in answer to requests, and those for Baltimore were obtained from the Annual Report of the Department of Health for the year 1901. And it should be noted that the statistics which are complete up to and including the year 1903, except in four instances, cover periods of time ranging from nineteen years for Chicago and Brooklyn, the lowest, to sixty-four years for Boston, the highest.

The other data upon which the report depends were obtained in answer to communications sent direct to health officers in American cities and to our consuls at the various European cities. As it is thought that the tables and charts contain sufficiently descriptive titles to render their interpretation easily intelligible, no attempt is made in the text to describe them other than that which each particular occasion requires. Nor will time or space permit us to more than thus very briefly abstract the replies.

In the cities of the United States the main feature of municipal quarantine consists in the isolation of the patient at the home, placarding the house, and terminal disinfection; whereas in the European cities it consists in the isolation, or, rather, aggregation of the patient, at special hospitals, at least when the patient cannot be properly quarantined and satisfactorily cared for at home. Placarding of houses is not deemed necessary. Indeed it is not even thought of, nor would it be tolerated, in Europe.

Diphtheria and scarlet fever are thus quarantined in all the cities. Measles has been required to be reported in Providence since 1886, in Philadelphia since May 23, 1904, in Brooklyn,

Baltimore and New York since 1898, and quarantined in New York since 1902. In Chicago, houses are placarded only when the attending physician will not assume responsibility for the spread of infection.

In New York, hotels, institutions and private houses are not placarded, but a placard is placed upon the door leading from the public hall of a tenement or boarding house to the apartment in which the patient is isolated. When houses are not placarded, strict isolation is enforced by the medical inspector of the district. This has been the method of quarantining only since 1902, but so satisfactory has it proven that no other method is now thought of.

In about one-half of the replies received from Health Officers of American cities, it is admitted that there is a decided prejudice against placarding, while the others incline to the opposite opinion.

In reply to the question propounded regarding the cause of the high mortality from measles in the European cities (except Berlin), no satisfactory answer was received. The reply from London stated that the general disposition to regard measles as a trivial disease, the dispensing with the services of the physician, together with the widespread epidemics and the absence of any obligation to notify the Health authority, probably account for it. That from Liverpool stated that the number of deaths reported did not fully indicate the destruction of life from measles, as undoubtedly many cases of death due to measles are entered in the returns as pneumonia or bronchitis. But no attempt was made to account for the high mortality of measles. That from Glasgow, although admitting that measles and whooping cough are the most fatal of the infectious diseases, stated that sanitation has had scarcely any success in restraining them.

Quarantine was adopted in Boston in 1875; in Providence in 1886; in St. Louis in 1887; in New York in 1888; in Cincinnati in 1892; in Washington in 1892; in Chicago in 1894; in Philadelphia in 1895, in Brooklyn in 1898; in Baltimore in 1898.

The replies from European cities do not state the time of the adoption of quarantine, but from other sources and for various reasons it would appear that they have been adopted within the last twenty or twenty-five years and that their growth toward effectiveness has been somewhat slower than that of the measures in this country.

More or less effective measures of medical inspection of schools seem to have been adopted in all the cities, but it has not been thought worth while in this report to attempt to ascertain their effect upon the mortality, inasmuch as it would make no material difference, whether its benefit be ascribed to municipal quarantine or to the measures employed by private physicians and the people on their own account, as will appear hereafter.

A careful study of the tables and charts will show whether we compare the rates of the last ten years with those of the last nineteen, the last twenty-four, or with those of the entire period ; or the rates of the last ten years with the preceding ten years ; or the rates since quarantine with the rates before quarantine, that there has been a decided decrease in mortality rates in all the cities for the three diseases whether considered separately or combined, with very few exceptions, during recent years, for the most part years in which quarantine measures for diphtheria and scarlet fever have been in vogue in American cities and more stringently enforced than formerly, in European cities. But inasmuch as there are other ways by which mortality can be reduced than by that of municipal quarantine, and more especially because measles is not quarantined in any of the cities except very recently in one or two, it becomes the main burden of this report to show how this reduction in mortality has been brought about, and just what part of it should be attributed to municipal quarantine.

Municipal quarantine brings about a reduction in mortality indirectly by bringing about a decrease in morbidity. But a decrease in infectiveness, new prophylactic measures of treatment, the natural variation in morbidity from year to year and measures employed by private physicians and the people on their own account, can lessen the morbidity also. However, inasmuch as mild cases of the diseases under consideration are acknowledged to be just as infective as the severer ones (the additional danger due to the prolongation of the period of infectiveness of the latter being more than counterbalanced by neglect of the former), as there has been no new prophylactic treatment, except perhaps in the case of diphtheria, and as whatever error might be attributable to the natural variation in the morbidity from year to year, is sought to be avoided in this report, by taking statistics extending over a sufficient length of time, there is left but municipal

quarantine and measures employed by private physicians and the people to be taken into consideration, in accounting for any reduction in morbidity.

In addition to these indirect ways, a reduction in mortality may be brought about directly : by new or improved methods of treatment, including, of course, specific treatment ; by decrease in virulence, or what practically would amount to the same thing, increase in resisting power ; by the willful falsifying of returns since quarantine, in order to deceive authorities as to the true nature of the disease. In regard to this latter, it is reasonably certain that any decrease thus brought about is more than counterbalanced by the inclusion of complications and other diseases formerly excluded, when the improved methods of diagnosis of recent years were scarcely more than thought of, this being particularly true in the case of diphtheria. And it is to be noticed in particular (because upon this fact is based one of the main points in the argument) that any decrease in mortality due to lessened virulence would not affect the comparative rates among the different cities, for the reason that such changes undoubtedly depend upon the laws that operate universally and not locally.

It should, perhaps, be stated here, in order for the more lucid understanding of the subject, that under measures employed by private physicians and the people on their own account, is intended to be included everything which the private physician and the people undertake of their own initiative, without being compelled to do so by the quarantine regulations, for the control and better treatment of the disease, such as self-imposed measures of quarantine, the adoption of better hygienic and sanitary measures, better methods of living and more rational and scientific treatment, etc. In a word, everything that may have made for the lessening of morbidity or mortality, as the result of advancement in civilization, and not included under any of the other methods enumerated in this report, by which morbidity or mortality could be decreased.

Now, it so happens, that of the three diseases under consideration, it can be claimed with the greatest show of probability, that the decrease in the mortality of each can best be accounted for in one of two ways : Diphtheria, either by antitoxin treatment, or by a reduction in morbidity, the result of quarantine ; scarlet fever, either by a decrease in virulence, or a decrease in

morbidity, the result of quarantine; measles, either by the measures employed by private physicians and the people on their own account, or by a reduction in morbidity, the indirect result of the establishment of quarantine for diphtheria and scarlet fever. In other words, there is no ground for believing, nor does any one claim, that treatment accounts for the improvement in mortality from scarlet fever, decrease in virulence for the improvement in mortality from diphtheria, or either of these from the improvement in mortality from measles. Hence, if the statistics can be intelligently elucidated in accordance with these views, it would seem unnecessary to pursue the matter further.

Scarlet Fever.

In table D, illustrated by chart IV, we have the average annual rates of mortality for the sixteen cities for the last ten years, compared with the immediately preceding ten years. The period of time covered is, with four exceptions, the same, and, with three exceptions, exactly twenty years. (The exceptions are noted in the table.) Taking first the ten American cities, we find that five of them, viz: New York, Baltimore, St. Louis, Chicago, Brooklyn, show respectively 52.6 per cent., 53.1 per cent., 54.8 per cent., 55.7 per cent., and 56.1 per cent. decrease in mortality during the last ten years as compared with the preceding ten years. These rates of decrease, practically almost the same for the five cities, might be accounted for by a decrease in virulence, according to the principle previously enunciated, and even the next higher, that of Philadelphia with a decrease of 61.8 per cent., and the next lower, that of Providence with a decrease of 46.2 per cent., might be thus accounted for, but surely not that of Boston with a decrease of only 28.3 per cent., that of Washington with a decrease of 80.9 per cent., or that of Cincinnati with a decrease of 83.1 per cent. But all these differences in rates can be accounted for on the theory of a difference in efficiency and length of time of quarantine, a careful inspection showing that if due allowance is made for the respective differences in time alone, the rates more nearly approach one another, being true, as well, for the fifty per cent. rates as for the higher and lower ones. For example, Boston shows a decrease of 28.3 per cent., New York 56.6 per cent. and Cincinnati

83.1 per cent. But in Cincinnati the last ten years alone were years of quarantine, whereas in New York and Boston, not only were the last ten years, but in the former six and in the latter the entire ten of the preceding ten years, were years of quarantine, as well.

Let us next consider Table E, illustrated by Chart V, which gives the average annual rates before and since quarantine, together with rate per cent. improvement since quarantine in the ten American cities. In order to institute proper comparisons, not only should the periods of time covered be the same, but the time before and since quarantine should be the same, or very nearly so.

The three cities most nearly approaching one another in these respects are : St. Louis, Providence and New York.

Reproducing from the chart we have :

	St. Louis.	Providence.	New York.
No. years before quarantine	14	15	15
Average annual rate before quarantine	4.33	8.80	8.10
No. of years of quarantine	17	17	16
Average annual rate for years of quarantine	1.39	2.90	3.72
Rate per cent. decrease in mortality since quarantine	67.9	67.0	54.1

An agreement in rate per cent. of improvement nothing short of remarkable, and which might be accounted for on the theory of gradually lessening virulence. But when we compare these rates with the rates of improvement in the other cities, in which the time of quarantine, as well as the number of years before and since quarantine, are all different, we find that this theory fails to account for the discrepancies. However, they can be explained on the quarantine theory, a due allowance for the difference of time element alone, accounting in a large measure for the differences in the rates, as we will see. Eliminating Brooklyn and Baltimore, with only five years each of quarantine, too short a time to expect accurate comparative results, we have : Chicago, with nine years before and ten years after quarantine, giving a decrease of 55.9 per cent., almost exactly the same as that of New York ; Philadelphia, with fifteen years before and nine years after quarantine, giving a decrease of 65.5 per cent.— greater than that of New York, and nearly equaling that of Providence and St. Louis ; Boston, with thirty-nine years before and twenty-five years since quarantine, giving a decrease of 72.3

per cent., the greater difference being accounted for, in part at least, by extending the time back to a period when treatment, hygiene and everything else, conspired to increase the mortality rate ; Washington, with sixteen years before and twelve years since quarantine, giving a decrease of 87.2 per cent., and Cincinnati, with twenty years before and ten years since quarantine, giving a decrease of 90.9 per cent., the greater rates in both instances and particularly the latter, being accounted for largely by the excess of the number of years before quarantine, over the years of quarantine.

Taking up now the European cities, we find that of the six, four, viz : Liverpool, Paris, London and Glasgow, show respectively a decrease in rate of mortality of 38.1 per cent., 40.8 per cent., 43.8 per cent., 43.9 per cent. during the last ten years as compared with the preceding ten years. Again a remarkable agreement in rates of improvement and which might be explained upon the theory of gradually lessening virulence, but for their great variance with the rate for Vienna, which shows a decrease of but 16.7 per cent., with that of Berlin, which shows an increase of 21.1 per cent., and with nearly all the rates for the American cities. Comparing the American with the European cities, we find that the former show an average decrease of 56.5 per cent., and the latter an average decrease of 31.7 per cent., in mortality during the last ten years over the preceding ten years.

This improvement in favor of the American cities considered in conjunction with the rate showings of the cities of the two countries, viz : 1.42 for the last ten years ; 3.28 for the preceding ten years; 2.34 for the last twenty years ; 3.80 for the entire period of statistics for American cities, and 2.01, 2.94, 2.47, 2.75 for the European cities, wherein we see that for the last twenty years, or perhaps longer, the rates of the cities of the two countries are nearly equal, is an argument in favor of quarantine, as it is in keeping with the facts, for in American cities the activity displayed in regard to this measure has been decidedly more pronounced during the last ten years as compared with the preceding ten years, whereas in the European cities there has not been such contrast between the two periods, but a more or less uniform practice, gradually being improved from year to year.

Hence we find that the quarantine theory is everywhere in accord, while that of lessening virulence is at variance, with the explanation of the facts in reference to the rates.

And while it may be admitted that some of the wider differences in rates cannot be fully accounted for except upon the theory of a corresponding difference in efficiency of quarantine, yet, inasmuch as a sufficiently definite knowledge upon this point cannot be obtained without a careful personal inspection and searching historical study of the methods of quarantine in each city, we can but leave the burden of disproof upon those who may raise the point for contention.

And further it should be noted here that those who claim that lessened virulence accounts for the decrease in mortality, will have to show that there has not been a corresponding decrease in morbidity—a claim not only at variance with general experience and apparent facts, but one hardly susceptible of demonstration, inasmuch as there are few or no reliable morbidity statistics for the period of time covered.

Diphtheria.

Table F, illustrated by Chart VII, gives the annual average rate of mortality for the last ten years and the preceding ten years, together with the rate per cent. decrease or increase in mortality of the latter period over the former, in the sixteen cities. As with the tables for scarlet fever, the period of time covered is, with four exceptions, the same, and, with three exceptions, exactly twenty years. (The exceptions are noted in the the table.)

The average for all the cities gives a decrease of 36.6 per cent. in mortality during the last ten years over the preceding ten years. A single glance at the table will negative any claim that might be made that the decrease is due to a decrease in virulence, that is if there is any credence to be given to our view of the operation of the law that must govern such a decrease, because of the wide range in the rates of improvement for the different cities—varying from an increase of 6.6 per cent. for Philadelphia and 38.2 per cent. for Liverpool, to a decrease of 57.9 per cent. for St. Louis and 73.8 per cent. for Paris.

Inasmuch as it is a well-known fact, acknowledged by all, that antitoxin has reduced very materially the mortality from diphtheria, it is for us to discover, if possible, whether our tables furnish any evidence tending to show that a part of the reduction in mortality is to be credited to quarantine, or any evidence tend-

ing to show its regulating and controling influence, rather than to discover whether or not all the reduction in mortality is to be thus accounted for.

It should be borne in mind here, as elsewhere, in regard to scarlet fever and measles, that we are considering in this paper solely the question whether or not quarantine can be credited with the *reduction* in mortality, and not with the question whether quarantine does any good or not. Although it would not be much of an argument in favor of its effectiveness, it might be possible for quarantine to do good and yet an increase in mortality be shown.

Taking the ten years preceding the last ten years (one year in Europe and two years in America, at least, before the introduction of antitoxin), we find that of the ten American cities, six, viz: New York, St. Louis, Brooklyn, Chicago, Boston, Baltimore, show respectively the following average annual rates of mortality per ten thousand inhabitants, 10.11; 9.99; 9.83; 9.51; 9.02; 8.33. A difference in rates between Baltimore and Boston of but .69; between Boston and Chicago of but .49; between Chicago and Brooklyn of but .32; between Brooklyn and St. Louis of but .16; between St. Louis and New York of but .12; and between the lowest and the highest of but 1.78. The slight differences in these rates, in addition to being strong evidence of their accuracy, would seem to indicate not only that ten years, generally speaking, is time enough to get fairly average rates, but that there was no one factor or element operating to reduce the mortality or to control the morbidity in one city or more to the exclusion of the others. Nor would the correctness of these inferences, if the difference in size, location, occupation, varied conditions to be met, etc., in the cities themselves be taken into consideration, seem to be much affected by comparing the rates of these six cities with the rates of the other four, viz: Providence with 6.70, Cincinnati with 6.70, Philadelphia with 6.37 and Washington with 4.45, as three are so nearly the same and differ from the rate for Baltimore not more than the rate for Baltimore differs from that of New York, and the fourth, Washington, differs from the rate for Philadelphia not more than the rate for Philadelphia differs from that of Baltimore. But how are these differences in rates to be accounted for, particularly the greater ones, viz: the rate between Washington and the next three higher, between

these three and the next six, and between Baltimore, the lowest, and New York, the highest of these six?

Surely not by the antitoxin treatment, because it was before the days of antitoxin.

Does quarantine give evidence of any effect? Washington, with the very lowest rate, has had but two years of quarantine, whereas New York has had six, St. Louis seven and Boston ten years. Providence has had seven and Cincinnati no years of quarantine, yet both show the same average annual rate. St. Louis, with seven years of quarantine, is within .12 of having the highest rate, and the five cities without any quarantine have an average of 8.17, while the five with a total of 32 years of quarantine have an average of 8.05, a difference of .12, not enough to base any claim upon.

However, as a matter of fact, if we take into consideration the differences in the cities themselves, size, location, etc., as has been before pointed out, then the rates of but two cities show sufficiently marked differences from the others to demand any explanation at all. These are the rates of Washington and Philadelphia. As neither antitoxin, nor any other specific treatment, could have operated, and as quarantine has not been shown to have any effect, we have left but one other way by which to account for these two relatively low rates, and that is on the theory that there was freedom from epidemics or severe manifestations of the disease, for a larger period than normal, in these two cities.

That this is the correct explanation is evidenced by the fact that during the next ten years, in spite of the antitoxin treatment, Philadelphia advanced in death rate for diphtheria 6.6 per cent., putting her where she would appear to belong, viz: in a class with New York, Brooklyn, Boston; and Washington decreasing .7 per cent., putting her in a class with cities of the second size, where she would seem to belong.

Considering next the cities of Europe for the same period of time, we find wide differences in the average annual rates, particularly between the three cities on the Continent as compared with those in Great Britain. Are the low rates of the latter to be accounted for by more effective measures of quarantine? Hardly, when two of them show an increase and the other but a slight decrease, during the next ten years, notwithstanding that

eight or nine of these years were years of antitoxin treatment. Besides, the lower rates for scarlet fever would indicate the more effective quarantine measures in the cities on the Continent. Nor would the very close agreement of the rates for the Continental cities with those of the American cities (viz: Berlin 10.11 with New York, Paris 6.95 with Providence, Vienna 7.45 with Cincinnati, etc.) seem at all to strengthen the point of contention, for if anything we should expect the more effective measures of quarantine in the cities on the Continent during this period.

However, it again seems worth while to note in passing that these further agreements in rates are but additional evidence of their correctness.

Taking up next for consideration the rates for the last ten years, from 1894 to 1903, we find that of the ten American cities, four, viz: Boston, Brooklyn, Philadelphia and New York, give, respectively, the following rates: 7.75; 7.40; 6.79; 6.68; and six, viz: Baltimore, Chicago, Washington, St. Louis, Cincinnati and Providence, give, respectively, the following rates: 5.43; 4.88; 4.42; 4.20; 3.96; 3.61. An improvement over the preceding ten years, and an agreement among the first four and among the other six, sufficiently close to show the effect of some definite regulating or controlling influence or factor, as well as to furnish additional proof of the accuracy of the rates themselves.

But how are the differences in these rates, varying from an increase of 6.6 per cent. for Philadelphia, to a decrease of 57.9 for St. Louis, over the preceding period, to be explained? Not at all (as we found was the case with scarlet fever) by a difference in the length of time of quarantine, for Philadelphia, with nine years of quarantine during this period and no years of quarantine during the previous period, should show a greater rate of improvement than St. Louis, with ten years of quarantine during this period and seven years of quarantine during the preceding period.

For the same reason Washington should show a greater rate of improvement than Boston, New York, Providence and St. Louis, and St. Louis, on the other hand, should show a less rate of improvement than Chicago, and Providence less than Cincinnati.

If we suppose that the greater rates of improvement have been

brought about by radical changes in methods of quarantine and the institution of decidedly more effective measures during this period, we would have to admit that the methods of quarantine in Chicago and St. Louis, say, are much superior to those of New York and Philadelphia, and those of Providence and Cincinnati superior to those of Washington,—an inference apparently not in accord with our present knowledge of the quarantine methods, nor corroborated by a comparison with the rates of improvement for scarlet fever in the respective cities.

Accordingly, we seem justified in attributing the improvement in rates to the antitoxin treatment, and in accounting for the discrepancies in the rates for St. Louis and Chicago, as was the discrepancy in the rates for Washington and Philadelphia for the former period accounted for, except that the rates for St. Louis and Chicago were decreased during the latter, and those for Washington and Philadelphia decreased during the former period. And as the higher rates of St. Louis and Chicago about balance the lower rates of Washington and Philadelphia, 32.6 per cent. cannot be far from the actual rate of improvement due to the antitoxin treatment.

As to the rates for the European cities for this same period, it can but be said that they fully corroborate the conclusions drawn from the rates for the American cities.

Contrary to what is the case in regard to scarlet fever, the rates of decrease, more particularly those for the cities of the Continent are greater than are the rates of decrease for the American cities.

This is exactly what we should expect, for not only was antitoxin used in the Continental cities first, but its use was pushed with more vigor and faith in the Continental cities than in the American cities.

In this same way also, no doubt, are the discrepancies between the rates of improvement for the cities of the British Isles and those of the cities of the Continent to be accounted for.

To be fully convinced that the improvement in mortality rates in the cities on the Continent is not due to quarantine, it is but necessary to glance at the rates for the ten years preceding antitoxin, and to remember that the improvement in methods of quarantine has not been radical enough to produce such decided and marked decrease in mortality rates.

Nor does Table G, illustrated by Chart VIII, which shows the rate of improvement since quarantine as compared with the rate before quarantine, seem to furnish any evidence of the controling effect of quarantine.

If it did, we would expect to find the greatest rate of improvement in those cities in which quarantine was instituted at or about the same time antitoxin came into use. And in that case, Philadelphia would come first in rate of improvement instead of eighth ; Cincinnati second instead of sixth ; Chicago third instead of first ; Washington fourth instead of ninth ; Brooklyn fifth instead of second ; Baltimore sixth instead of fifth ; New York seventh instead of third ; Providence eighth instead of fourth ; St. Louis ninth instead of seventh ; Boston alone being in her correct place, viz : tenth.

On the other hand the rates for the different cities since quarantine, if we take into consideration the number of years of quarantine and make due allowance for time of antitoxin treatment and the various local conditions operating in the different cities to produce difference in rates, as has been more than once already referred to, furnish ample evidence to justify the conclusion that their reduction is due to the antitoxin treatment and that the rates themselves are measurably correct.

The rate for Cincinnati being 3.96 for 10 years of quarantine ;

Washington,	4.69 for 12	"	"
Providence,	4.80 for 17	"	"
Chicago,	4.87 for 10	"	"
Brooklyn,	5.81 for 5	"	"
Baltimore,	5.82 for 5	"	"
St. Louis,	6.12 for 17	"	"
Philadelphia,	6.53 for 9	"	"
New York,	7.74 for 16	"	"
Boston,	9.34 for 24	"	"

Measles.

From Table H, illustrated by Chart X, and corresponding to Table F for diphtheria, and Table D for scarlet fever, it will be seen that in all the cities but four there was a decided reduction in the rate of mortality during the last ten years as compared with the preceding ten years, and that the average rate per cent. of reduction for all the cities is 27.4 per cent. The correspond-

ing rates for diphtheria and scarlet fever are 33.6 per cent. and 47.9 per cent.

From Table I, illustrated by Chart XI, and corresponding to Table G for diphtheria and Table E for scarlet fever, it will be seen that there has been, in all the cities but one, a decided reduction in rate of mortality since the times of quarantine for scarlet fever and diphtheria, as compared with the time before quarantine, and that the average rate per cent. of reduction for all the cities is 44.0 per cent. The corresponding rates for diphtheria and scarlet fever are 24.4 per cent. and 70.8 per cent. Measles is not quarantined by law except recently in one or two cities (noted elsewhere), nor has any specific treatment been instituted or claim of lessened virulence made, or thought of. How, then, is the lessened rate of mortality to be accounted for?

Although, at first sight, there may appear to be some color of reason for the claim that this reduction is attributable to the laws requiring the quarantine of diphtheria and scarlet fever, inasmuch as the reduction has taken place since the enactment of such laws, yet a closer scrutiny but reveals the difficulty of understanding how a law could exercise control over a disease, when the law did not exist for such a purpose. Moreover, it seems almost impossible of explanation as to how the quarantine of diphtheria could fail to reduce the mortality of diphtheria and yet reduce the mortality of measles, or how the quarantine of scarlet fever could exert any greater effect upon the mortality of measles than the quarantining of diphtheria exerts upon the mortality of measles.

But what are the facts? In Table H we note that Boston gives .99 and St. Louis .71 as the average annual rate of mortality per ten thousand inhabitants for the ten years preceding the last ten years, and we might be led to infer that the ten years of quarantine for diphtheria and scarlet fever in the former, and the seven years of quarantine in the latter, might account for the comparatively low rates, did not Philadelphia without any quarantine show a rate equally as low as that of Boston, and nearly as low as that of St. Louis. Moreover, New York with six years of quarantine gives much the highest rate for American cities, notwithstanding none of the other cities except Washington had quarantine during this period, and Washington with two years of quarantine gives a higher rate than all those without quar-

antine, except Baltimore and Cincinnati. During the last ten years we find that Baltimore with only four years of quarantine gives next to the lowest rate, notwithstanding all the other cities except Philadelphia and Brooklyn had ten years of quarantine.

Again, while a comparative study of Tables D and H, E and I, and Chart XII *A* and *B*, would indicate that somewhat of the same causes operated to decrease the rate of mortality of both scarlet fever and measles, yet the very much wider range of rates in the different cities for measles, together with their more or less decided variation from the rates for scarlet fever, tends to show not only that measles is not under as definite a control as scarlet fever, but that the controlling influence or factor cannot be entirely the same.

For example, considering the rates per cent. improvement during the last ten years over the preceding ten in American cities, we find that Baltimore shows the greatest rate of decrease in mortality for measles, 76.3 per cent., with 53.1 per cent. for scarlet fever; Cincinnati shows the greatest rate of decrease for scarlet fever, 83.1 per cent., with 41.6 per cent. for measles; Brooklyn shows the lowest rate of improvement for measles, an increase of 6.9 per cent., with 56.1 per cent. for scarlet fever; Boston shows the lowest rate of improvement for scarlet fever, 28.3 per cent., with 21.2 per cent. for measles. In other words, Baltimore stands first in rate of improvement for measles, but seventh in rate of improvement for scarlet fever; Cincinnati first for scarlet fever and sixth for measles; Brooklyn tenth for measles and fourth for scarlet fever; Boston tenth for scarlet fever and seventh for measles.

Moreover, the variations of the rate of improvement for measles in the American cities, is from an increase of 6.9 per cent. for Brooklyn, to a decrease of 76.3 per cent. for Baltimore; while that of scarlet fever (not counting Boston, for reasons elsewhere apparent) is only from 46.2 per cent. decrease for Providence, to 83.1 per cent. decrease for Cincinnati. And the want of agreement between the rates of improvement for the two diseases, is more marked in the rates of cities of Europe than in the rates for the cities of America.

Turning next to Tables E and I, which give, respectively, the rates of improvement for scarlet fever and measles in the ten American cities since quarantine for diphtheria and scarlet fever,

we observe that Baltimore stands first in rate of improvement for measles, but third in rate of improvement for scarlet fever; Cincinnati first in scarlet fever, but seventh in measles; Providence lowest in measles, but sixth in scarlet fever; Brooklyn lowest in scarlet fever, but ninth in measles; and so on, no city maintains the same relative rate of improvement for the two diseases, except St. Louis, which ranks fifth in rate of improvement for both measles and scarlet fever. And what appears to be further significant in this connection is the fact that Providence, the only city whose rate of mortality increased, required the reporting of measles since 1886; Brooklyn, with next to the lowest rate of improvement, quarantined measles since 1898, and New York, with the third lowest rate of improvement, quarantined since 1896.

Feeling assured, then, that these facts are fully in accord with the views at first expressed in regard to the matter, and realizing that the enactment of quarantine laws, generally speaking, is but an expression of the desires and practices of the more enlightened element in the community, and that the law is intended to, and is needed only to reach the careless, the ignorant or derelicts, and does good only in so far as it does reach them, it is reasonably certain that not more than a tithe of the decrease in the mortality of measles can be credited to the quarantine laws for diphtheria and scarlet fever. This being the case, there is left but one other way, and that is the measures instituted by private physicians and the people on their own account, by which the reduction in mortality of measles could have been brought about.

And furthermore, if this fact has been established, and it seems reasonably certain that it has, then it follows almost without a doubt, that a large percentage of the reduction in mortality of scarlet fever has been brought about in the same way—a reduction equal, at least, it would seem, to that of measles.

Conclusions and Recommendations.

The data and statistics of this report seem fully to justify the following conclusions and recommendations:

First. That the statistics furnish evidence in themselves of accuracy sufficient, at least, to warrant faith in them for practical deductions.

Second. There has been a marked decrease in mortality of the three diseases, diphtheria, measles and scarlet fever, during recent years, for the most part since the introduction of antitoxin and the establishment of municipal quarantine.

Third. The reduction in the mortality of diphtheria, which in the last ten years has been for the sixteen cities an average of 36.6 per cent., and for the years of quarantine for the ten American cities an average of 24.4 per cent., can best be accounted for on the theory that it is due to the antitoxin treatment.

Fourth. The reduction in the mortality of measles, which for the last ten years for the sixteen cities has been an average of 27.4 per cent., and for the years of quarantine for the ten American cities has been an average of 44.0 per cent., can best be accounted for on the theory that it has been brought about by the measures employed by private physicians and the people on their own account.

Fifth. The reduction in the mortality of scarlet fever, which for the last ten years for the sixteen cities has been an average of 47.9 per cent., and for the years of quarantine for the ten American cities has been an average of 70.8 per cent., can best be accounted for on the theory that a part, perhaps one-half, has been brought about by municipal quarantine, and the rest by the measures employed by private physicians and the people on their own account.

Sixth. While the showing made in this report for municipal quarantine may be somewhat disappointing to the more earnest advocates of the measure, nevertheless it is sufficient to justify the continuance of the service and even to warrant its extension so as to include measles (the mortality from which, at the present day, nearly equals that of scarlet fever in this country and far exceeds it in Europe, particularly in the British Isles), providing there can be eliminated from the service all those unreasonable and unnecessary measures which, by the prejudice they engender, tend to defeat, in part at least, the very objects for which the laws are created.

Seventh. Chief among these measures is thought to stand that of placarding houses, and as effective quarantine cannot be maintained and enforced except by careful supervision and frequent inspection by the Health authorities, it evidently would be a decided gain to have this latter method entirely supersede the former.

Eighth. The methods of quarantine in New York City, where cards are used only in special cases, and, more particularly, the methods in the European cities, demonstrate the feasibility and practicability of maintaining quarantine without the card system.

Ninth. The probability that the failure of quarantine to reduce the mortality of diphtheria is due to the fact that the measures in vogue are not such as the nature of the disease and the conditions to be met require, rather than that the disease cannot be effectively quarantined, indicates the necessity of so adjusting the laws and regulations as to meet the requirements for each particular disease.

Tenth. The showing made in Europe and to some extent in this country justifies the establishment of quarantine hospitals for the treatment of persons suffering with the diseases under consideration, especially those persons who cannot be properly isolated and cared for at their homes.

Eleventh. As the inadequacy of terminal disinfection has been pretty clearly set forth by Dr. Chapin, the Health Officer of Providence, Rhode Island, and as trusting to its efficacy may account, in part at least, for the failure of quarantine to lessen the mortality from diphtheria, there should be substituted for or required in addition to this measure as recommended by Dr. Chapin, the maintenance of absolute and constant disinfection throughout the entire course of the disease and until all possibility of spreading infection is known to be over.

J. W. Chappell, *Chairman*,
John Bradford Briggs,
Hobart S. Dye,
George W. Wood,
Wm. C. Woodward,*
Robert Scott Lamb,
Truman Abbe,
Anne A. Wilson,
Committee on Public Health.

Explanations to accompany tables and charts:

In each case, 1 indicates Boston; 2, New York; 3, Brooklyn; 4, Berlin; 5, Baltimore; 6, Chicago; 7, Philadelphia; 8, St.

*Judgment is reserved as to advisability of abolishing the use of placards. —W. C. W.

Louis; 9, Providence; 10, Vienna; 11, Paris; 12, Cincinnati; 13, Washington; 14, London; 16, Glasgow; 17, Liverpool.

Actual rates, and not average annual rates, are given for Baltimore.

In Brooklyn, according to the reply received, houses were not placarded until 1898, although there were measures of quarantine years previous to this date.

In Providence the average annual rate is based on 12 years' statistics, instead of 10 years.

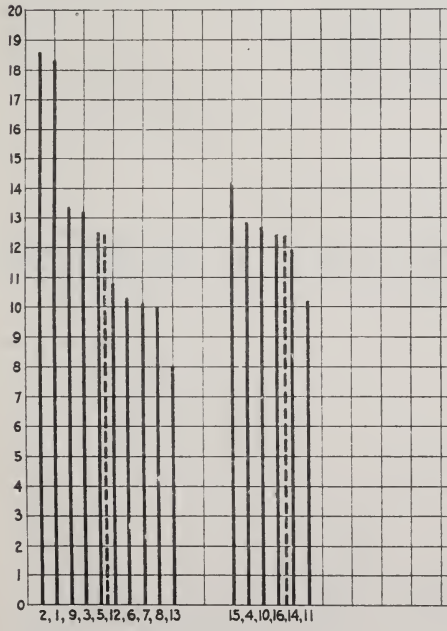
In a few instances, as shown in tables and charts, croup rates are added to those of diphtheria.

It is not claimed that there are no errors in the charts and tables, but if they exist, it is believed they are not sufficient to materially affect the general result.

CHART I.—Diphtheria, Scarlet Fever and Measles, Combined.

Showing average annual rate of mortality per 10,000 inhabitants for entire time for which statistics could be obtained. Left, American cities; right, European.

Dotted lines represent averages: 12.53 American, 12.40 European.



Showing average annual rate of mortality for 20 years (1884 to 1903). Left, American; right, European cities.

Dotted lines represent averages: 10.70 American, 11.78 European.

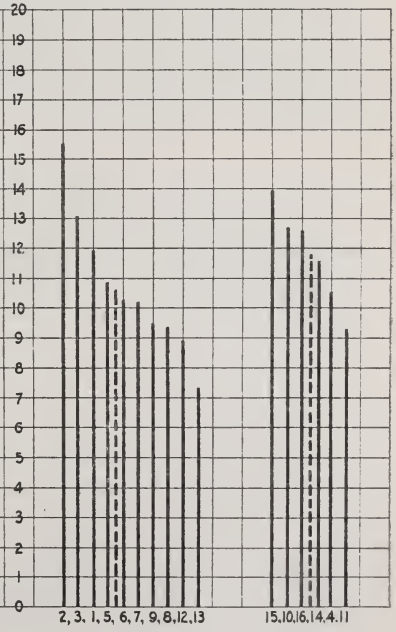


CHART II.——Diphtheria, Scarlet Fever and Measles, Combined.

Showing average annual rate of mortality per 10,000 inhabitants, in periods of 10 years, for the three diseases.

Dotted line represents average for the 16 cities, 13.68 and 8.63.

Showing rate per cent. decrease in mortality during last 10 years, as compared with preceding 10 years.

Dotted verticals show average rate per cent. decrease for the 16 cities, 36.9.

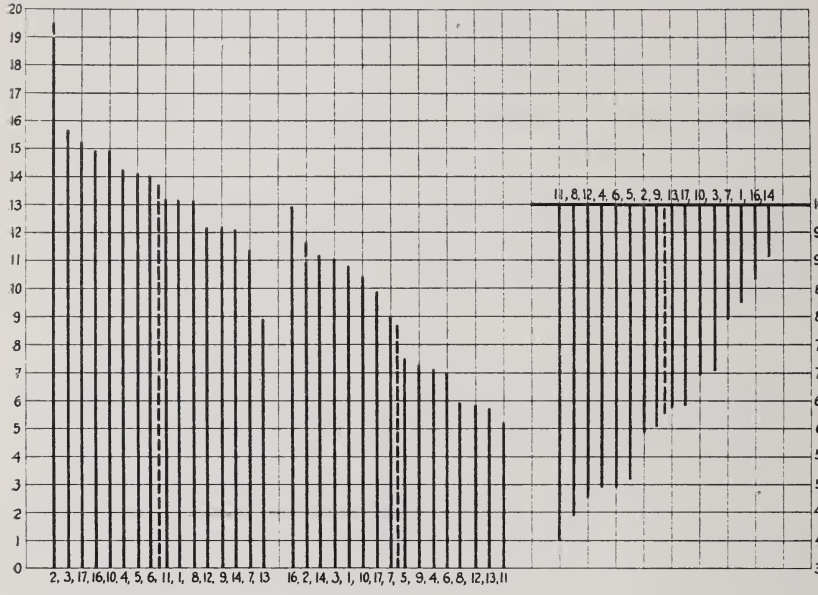


CHART III.——Scarlet Fever.

Decrease in mortality: American, 56.7; European, 31.6 per cent.

Showing average annual rate mortality per 10,000 inhabitants for which statistics could be obtained. American cities on left, European on right.

Dotted lines represent average:
3.80 American; 2.75 European.

Showing average annual rate for 10 years, partly quarantine, in American cities (1884 to 1893). American cities on left, European on right.

3.28 Amer.; 2.94 European.

Showing average annual rate for 10 years, mainly quarantine, in American cities (1894–1903). American cities on left, European cities on right.

1.42 American; 2.01 European.

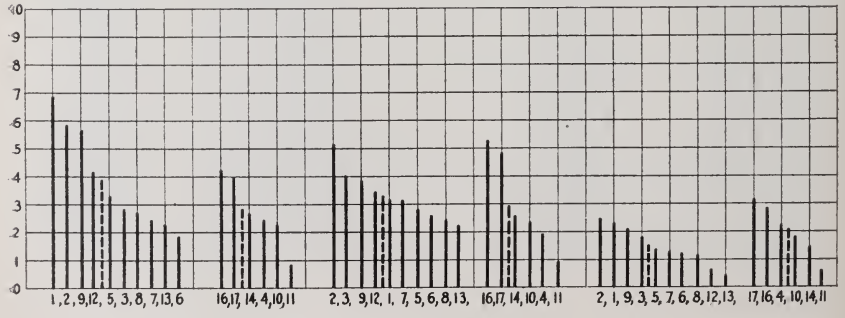


CHART IV.—Scarlet Fever.

Showing average annual rate of mortality per 10,000 inhabitants, in periods of 10 years. The last 10 years being mainly years of quarantine.

Dotted line represents average for the 16 cities, 3.15 and 1.51.

Showing rate per cent. decrease or increase in mortality during last 10 years, as compared with preceding 10 years, in 16 cities.

Dotted line shows average rate per cent. decrease for the 16 cities, 47.9.

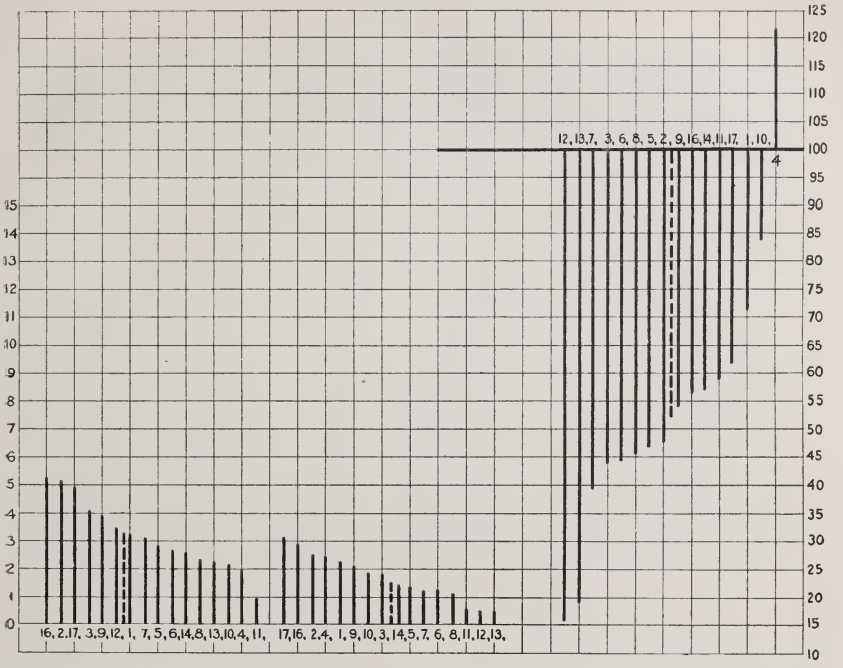


CHART V.—Scarlet Fever.

Showing average annual rate of mortality per 10,000 inhabitants, before and after quarantine, in 10 American cities.

Dotted lines represent average for the 10 cities, 5.75 and 1.68.

Showing rate per cent. decrease in mortality after quarantine, in 10 American cities.

Dotted line shows average rate decrease for all, 70.8 per cent.

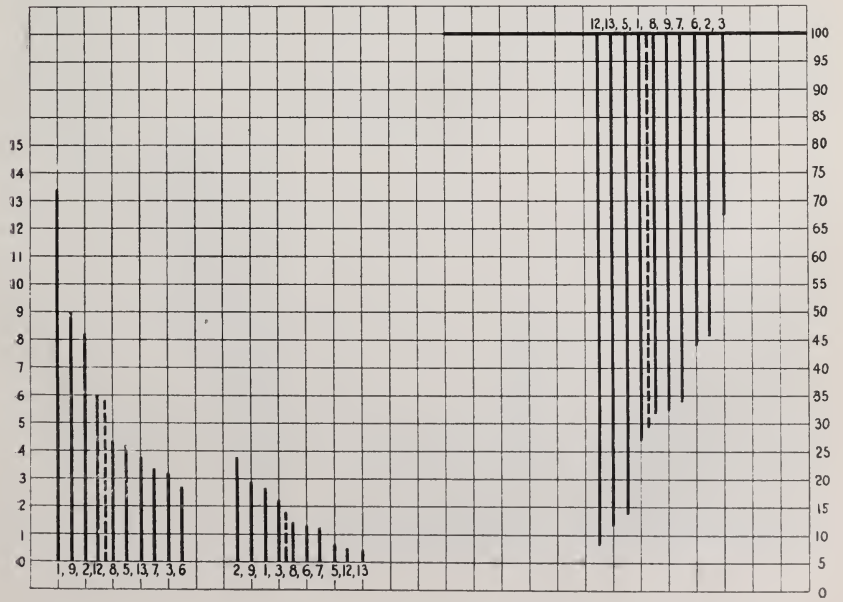


CHART VI.—Diphtheria.

Decrease in mortality: American, 32.8; European, 46.3 per cent.

Showing average annual rate for entire time for which statistics could be obtained. American cities on left, European cities on right.

Dotted lines represent average:
7.00 American; 4.50 European.

Showing average annual rate of mortality per 10,000 inhabitants for 10 years; partly quarantine, in American cities, about 1884 to 1893. American cities on left, European on right.
8.20 Amer.; 5.40 European.

Showing average annual rate for 10 years, mainly quarantine, in American cities, 1894 to 1903. Left, American; right, European cities.

5.51 Amer.; 2.90 European.

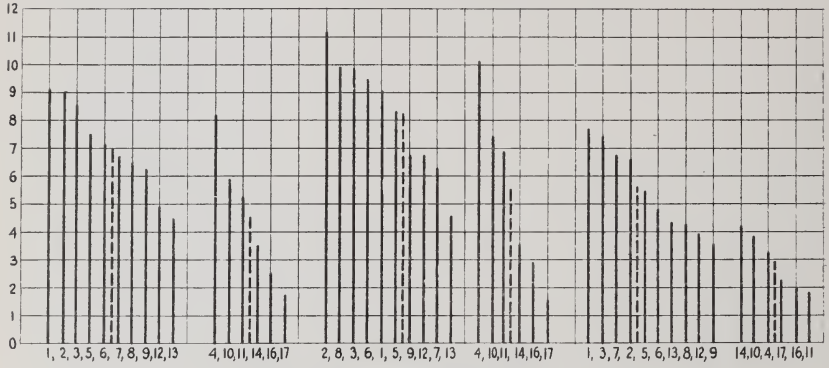


CHART VII.—Diphtheria.

Showing average annual rate of mortality per 10,000 inhabitants in periods of 10 years, the last 10 years being mainly years of quarantine.

Dotted line represents average for the 16 cities, 7.15 and 4.53.

Showing rate per cent. decrease or increase in mortality during last 10 years, as compared with the preceding 10 years, in 16 cities.

Dotted line shows average rate per cent. decrease for all, 36.6.

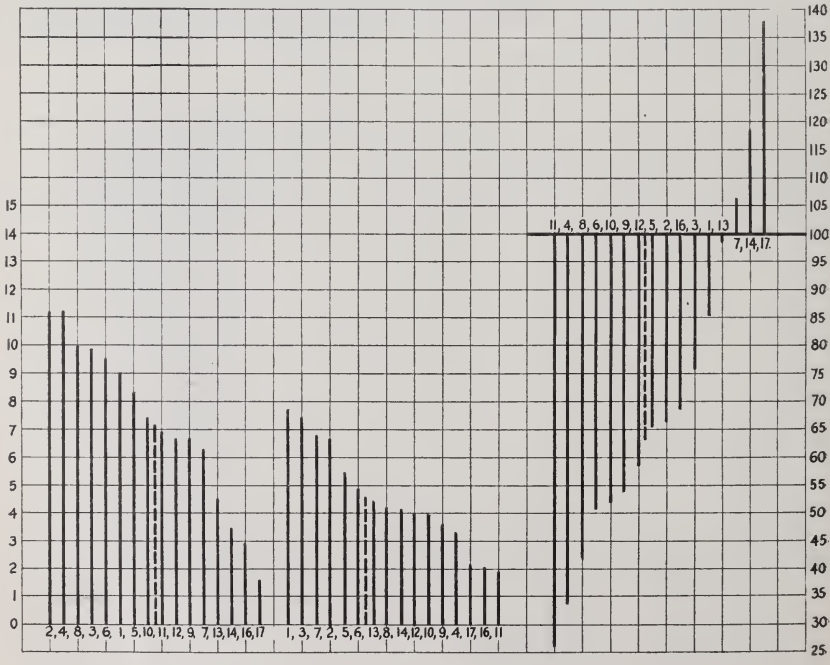


CHART VIII.—Diphtheria.

Showing average annual rate of mortality per 10,000 inhabitants, before and after quarantine, in 10 American cities.

Dotted line represents average for 10 cites: Diphtheria and croup, 8.77 and 6.42; diphtheria, 7.89 and 5.97.

Above short horizontals indicates croup.

Showing rate per cent. decrease or increase in mortality after quarantine in 10 American cities.

Dotted line shows average rate per cent. decrease for all: Diphtheria and croup, 26.7; diphtheria, 24.4.

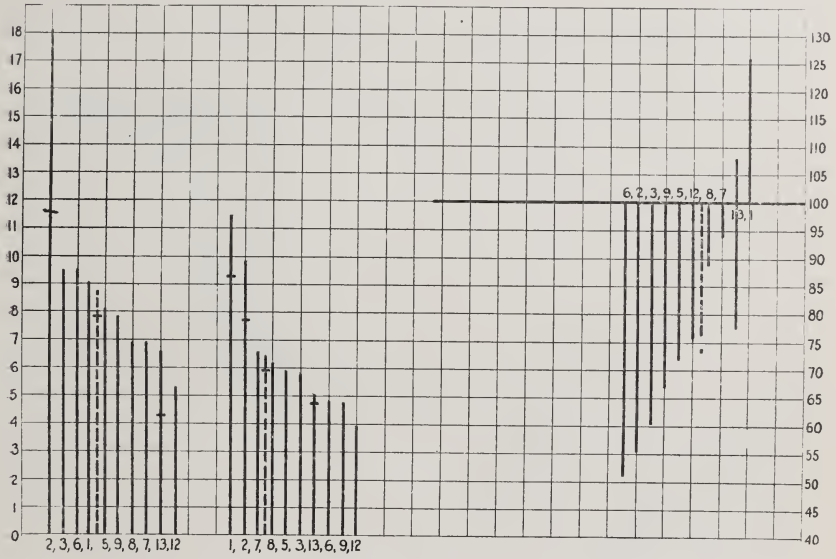


CHART IX.—Measles.

Decrease in mortality: American, 38.6; European, 21.2.

Showing average annual rate mortality per 10,000 inhabitants, for entire time for which statistics could be obtained. American cities on left, European on right.

Dotted lines represent average:
1.73 American; 5.16 European.

Showing average annual rate mortality per 10,000 inhabitants for 10 years, from about 1884 to 1893, when diphtheria and scarlet fever were only partly quarantined in American cities. American cities on left, European on right.
1.94 American; 5.75 European.

Showing average annual rate mortality per 10,000 inhabitants for 10 years, from 1894 to 1903, when diphtheria and scarlet fever were quarantined in American cities. American cities on left, European on right.
1.19 American; 4.53 European.

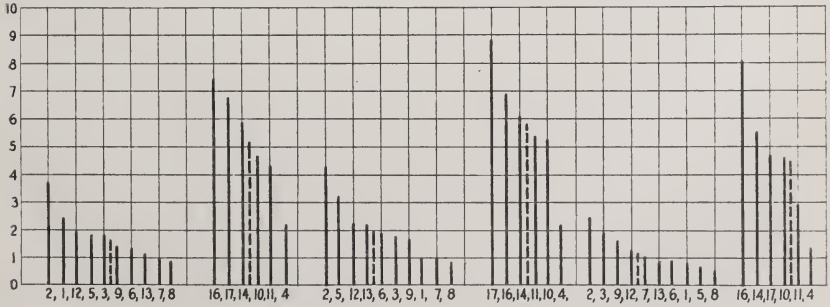


CHART X.—MEASLES.

Showing average annual rate of mortality per 10,000 inhabitants in periods of 10 years, the last 10 years being mainly years when diphtheria and scarlet fever were quarantined.

Dotted lines represent average for the 16 cities, 3.37½ and 2.50.

Showing rate per cent. decrease or increase in mortality during last 10 years, as compared with preceding 10 years.

Dotted line shows average rate for the 16 cities, 27.4 per cent.

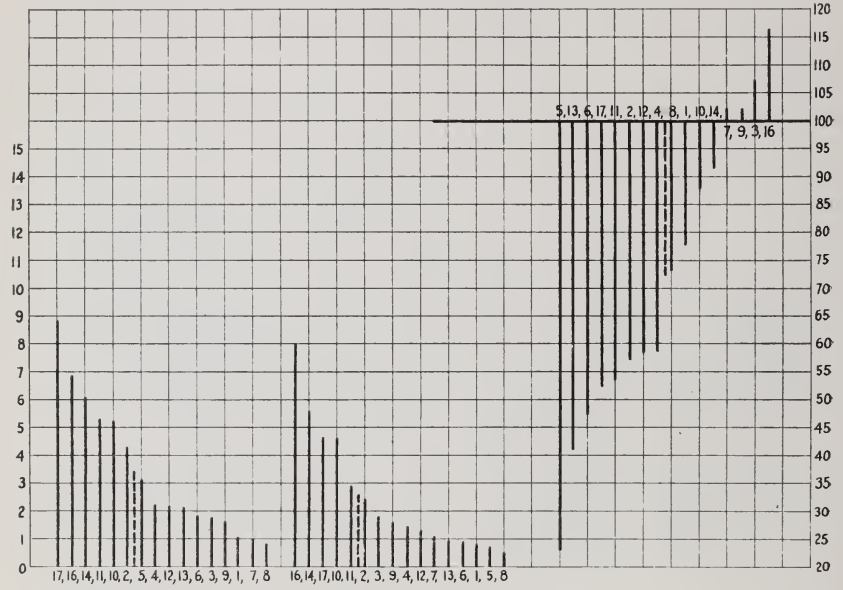


CHART XII.

Showing rate per cent. decrease or increase in mortality in 16 cities during last ten years as compared with the preceding ten years, for measles and scarlet fever, arranged in parallel columns.

Dotted line, measles; black line, scarlet fever.

Showing rate per cent. decrease or increase in mortality in 10 cities since quarantine of scarlet fever, for measles and scarlet fever, arranged in parallel columns.

Dotted line, measles; black line, scarlet fever.

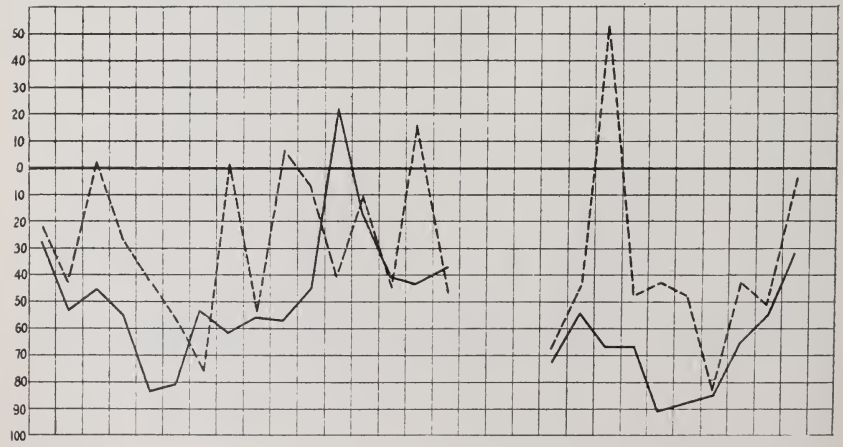


CHART XI.——MEASLES.

Showing average annual rate of mortality per 10,000 inhabitants, before and after time of quarantine of diphtheria and scarlet fever, in 10 American cities.

Dotted line represents average for the 10 cities, 2.05 and 1.15.

Showing rate per cent. decrease or increase in mortality after quarantine of diphtheria and measles in 10 American cities.

Dotted line represents average gain for 10 cities, 44.0 per cent.

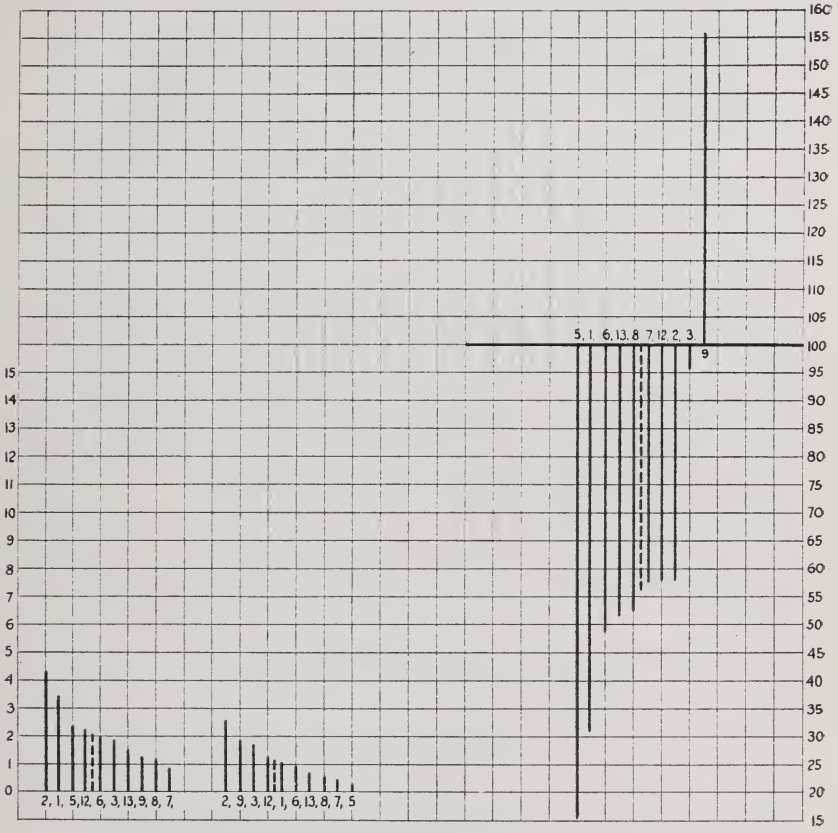


TABLE C.—Total Average Annual Rate of Mortality per 10,000 Inhabitants, in Periods of 10 Years, for the Three Diseases—Diphtheria, Scarlet Fever and Measles—Combined.

City.	Period of statistics.	No. years quarantine.	Total for 3 diseases.	Quarantine began.	No. years quarantine.	Total for 3 diseases.	Increase.	Decrease.	Per cent. of increase.	Per cent. decrease.
Boston—1	1884–1903	10	13.15	1879	10	10.78	...	2.37	...	18.0
New York—2	1884–1903	6	19.44	1888	10	11.54	...	7.90	...	40.6
Providence—9	1881–1902	7	12.15	1886	10	*7.31	...	4.84	...	39.8
St. Louis—8	1884–1903	5	13.09	1887	10	5.80	...	7.29	...	55.6
Cincinnati—12	1882–1901	0	12.17	1892	10	5.75	...	6.42	...	52.7
Washington—13	1884–1903	2	8.89	1892	10	5.74	...	3.15	...	35.4
Baltimore—5	1882–1901	0	14.17	1898	4	7.45	...	6.72	...	47.4
Philadelphia—7	1884–1903	0	11.44	Jun. 18 1895	9	8.98	...	2.46	...	21.5
London—14	1884–1903	0	12.10	...	...	11.14	...	.96	...	7.9
Berlin—4	1884–1903	0	14.22	...	...	7.04	...	7.18	...	50.4
Vienna—10	1884–1903	0	14.92	...	...	10.43	...	4.49	...	30.1
Paris—11	1884–1903	0	13.19	...	...	5.28	...	7.91	...	60.0
Glasgow—16	1881–1900	0	14.97	...	...	12.90	...	2.07	...	13.8
Liverpool—17	1884–1903	0	15.31	...	...	9.90	...	5.41	...	35.3
Chicago—6	1885–1903	0	14.02	1894	10	6.95	...	7.07	...	50.4
Brooklyn—3	1885–1903	0	15.65	1898	5	11.05	...	4.60	...	29.4
Total			218.88	...	...	138.04	...	80.84	...	...
Average for the three diseases combined for the 16 cities,			13.68	...	...	8.63	...	5.05	...	36.9

*Average of 12 years.

TABLE D.—Scarlet Fever.—Average Annual Rate of Mortality per 10,000 Inhabitants, in Periods of 10 Years.

City.	Time of statistics.	No. years quarantine.	Total.	Average rate.	Quarantine began.	No. years quarantine.	Total.	Average rate.	Increase.	Decrease.	Per cent. of increase.	Per cent. of decrease.
Boston—1	1884-1903	10	31.39	3.14	1879	10	22.50	2.25	...	.89	...	28.3
New York—2	1884-1903	6	50.70	5.07	1888	10	24.03	2.40	...	2.67	...	52.6
Providence—9	1881-1902	7	...	3.85	1886	10	24.90‡	2.07	...	1.78	...	46.2
St. Louis—8	1884-1903	7	23.95	2.39	1887	10	10.81	1.08	...	1.31	...	54.8
Cincinnati—12	1882-1901	0	34.30	3.43	1892	10	5.43	.54	...	2.89	...	83.1
Washintgon—13	1884-1903	2	23.10	2.31	1892	10	4.42	.44	...	1.87	...	80.9
Baltimore—5	1882-1901	0	...	2.75	1898	4	...	1.29	...	1.46	...	53.1
Philadelphia—7	1884-1903	0	30.86	3.08	1895†	9	11.91	1.19	...	1.89	...	61.3
London—14	1884-1903	0	25.30	2.53	...	...	14.22	1.42	...	1.11	...	43.8
Berlin—4	1884-1903	0	19.45	1.94	...	...	23.49	2.35	.41	...	21.1	...
Vienna—10	1884-1903	0	22.08	2.21	...	...	18.38	1.84	...	.37	...	16.7
Paris—11	1884-1903	0	9.27	.93	...	...	5.51	.55	...	.38	...	40.8
Glasgow—16	1881-1900	0	51.63	5.16	...	...	28.70	2.87	...	2.29	...	43.9
Liverpool—17	1884-1903	0	49.11	4.91	...	...	30.39	3.04	...	1.87	...	38.1
Chicago—6	1885-1903	0	24.23*	2.69	1894	10	11.91	1.19	...	1.50	...	55.7
Brooklyn—3	1885-1903	0	36.77*	4.08	1898	5	17.88	1.79	...	2.29	...	56.1
Total				50.47	...	...	...	26.31	...	...	...	...
Average for 16 cities				3.15	...	...	...	1.64	...	1.51	...	47.9

*9 years.

†June 18.

‡12 years.

TABLE E.—Scarlet Fever.—Average Annual Rate of Mortality per 10,000 Inhabitants in 10 American Cities Before and After Quarantine.

City.	Date of quarantine.	Total before.	No. years.	Average before.	Total after.	No. years.	Average after.	Increase.	Decrease.	Rate per ct. increase.	Rate per ct. decrease.
Cincinnati—12	1892	118.9	20	5.94	5.4	10	.54	...	5.40	...	90.9
Washington—13	1892	58.90	16	3.68	5.71	12	.47	...	3.21	...	87.2
Baltimore—5	1898	...	20	4.13	...	5	.58	...	3.55	...	85.9
Boston—1	1879	417.96	39	13.28	66.99	25	2.68	...	9.60	...	72.3
St. Louis—8	1887	60.60	14	4.33	23.57	17	1.39	...	2.94	...	67.9
Providence—9	1886	...	15	8.80	...	17	2.9	...	5.9	...	67.
Philadelphia—7	1895	50.90	15	3.39	10.56	9	1.17	...	2.22	...	65.5
Chicago—6	1894	24.33	9	2.70	11.91	10	1.19	...	1.51	...	55.9
New York—2	1888	121.2	15	8.10	59.5	16	3.72	...	4.38	...	54.1
Brooklyn—3	1898*	43.93	14	3.13	10.72	5	2.14	...	.99	...	31.6
Total				57.48	...	...	16.78	...	...	...	..
Average for the 10 cities				5.75	...	...	1. 68	...	...	...	70.8

*Previous to 1886 quarantine, placard in 1898.

TABLE F.—DIPHTHERIA.—AVERAGE ANNUAL RATE OF MORTALITY PER 10,000 INHABITANTS, IN PERIODS OF 10 YEARS.

City.	Period of time.	No. years quarantine.	Total.	Average rate.	Quarantine began.	No. years quarantine.	Total.	Average rate.	Increase.	Decrease.	Per cent. of increase.	Per cent. of decrease.
Boston—1	1884-1903	10	90.18	9.02	1879	10	77.52	7.75	...	1.27	...	14.1
New York—2	1884-1903	6	101.11	10.11	1888	10	66.86	6.68	...	3.43	...	33.9
Providence—9	1881-1902	7	...	6.7†	1886	10	43.35	3.61†	...	3.09	...	46.1
St. Louis—8	1884-1903	7	99.89	9.99	1887	10	42.05	4.20	...	5.79	...	57.9
Cincinnati—12	1882-1901	0	67.00	6.70	1892	10	39.60	3.96	...	2.74	...	40.9
Washington—13	1884-1903	2	44.53	4.45	1892	10	44.17	4.42	...	.03	...	.7
Baltimore—5	1882-1901	0	...	8.33	1898	4	...	5.43	...	2.9	...	34.8
Philadelphia—7	1884-1903	0	63.73	6.37	1895‡	9	67.88	6.79	.42	...	6.6	...
London—14	1884-1903	0	34.92	3.49	...	0	41.23	4.12	.63	...	18.0	...
Berlin—4	1884-1903	0	101.12	10.11	...	0	33.89	3.39	...	6.72	...	66.5
Vienna—10	1884-1903	0	74.57	7.45	...§	0	39.16	3.91	...	3.54	...	47.5
Paris—11	1884-1903	0	69.53	6.95	...	0	18.20	1.82	...	5.13	...	73.8
Glasgow—16	1881-1900	0	29.27	2.93	...	0	20.08	2.01	...	.92	...	31.4
Liverpool—17	1884-1903	0	15.73	1.57	...	0	21.17	2.17	.60	...	38.2	...
Chicago—6	1885-1903	0	*85.58	9.51	1894	10	48.77	4.88	...	4.63	...	48.7
Brooklyn—3	1885-1903	0	*88.51	9.83	1898	5	74.02	7.40	...	2.43	...	24.7
Total				114.51	...	...	...	72.54	...	2.62	...	36.6
Average for 16 cities				7.15	...	...	...	4.53	...		...	

*9 years. †12 years, average. ‡June 18. § Diphtheria and croup.

TABLE G.—Diphtheria.—Average Annual Rate of Mortality per 10,000 Inhabitants in 10 American Cities Before and After Quarantine.

City.	Date of quarantine.	Total before.	No. years.	Average before.	Total after.	No. years.	Average after.	Increase.	Decrease.	Rate per ct. increase.	Rate per ct. decrease.
Chicago—6	1894	85.58	9	9.51	48.77	10	4.87	...	4.64	...	48.7
New York—2 { Diph. and croup.	1888	272.2	15	18.10	157.8	16	9.86	...	8.24	...	44.5
New York—2 { Diphtheria	1888	92.82	8	11.60	123.9	16	7.74	...	3.86	...	33.3
Brooklyn—3	1898	133.48	14	9.53	29.05	5	5.81	...	3.72	...	39.0
Providence—9	1886	...	15	7.83	...	17	4.8	...	3.03	...	32.7
Baltimore—5	1898	...	20	8.06	...	5	5.82	...	2.24	...	27.7
Cincinnati—12	1892	105.4	20	5.27	39.6	10	3.96	...	1.31	...	24.8
St. Louis—8	1887	96.97	14	6.92	104.07	17	6.12	...	.80	...	11.5
Philadelphia—7	1895	103.50	15	6.90	58.79	9	6.53	...	.37	...	5.3
Washington—13 { Diphtheria....	1892	69.28	16	4.33	56.27	12	4.69	.36	...	8.3	...
Washington—13 { Diph. and c..	1892	104.86	16	6.55	60.89	12	5.07	...	1.48	...	22.6
Boston—1 { Diphtheria.....	1879	...	...	...	...	24	9.34	...	...	...	...
Boston—1 { Diph. and croup.....	1879	172.88	18	9.04	284.95	25	11.40	2.36	...	26.1	...
Total, diphtheria				78.99	...	...	59.68	...	...	...	
Average for the 10 cities				7.89	...	...	5.97	...	...	...	24.4
Total, diphtheria and croup				87.71	...	...	64.24	...	...	...	
Average for the 10 cities				8.77	...	...	6.42	...	...	...	26.7

TABLE H.—Measles.—Average Annual Rate of Mortality per 10,000 Inhabitants in Periods of 10 Years, Last 10 Years Being Mainly Years of Quarantine for Diphtheria and Scarlet Fever.

City.	Time of statistics.	No. years quarantine.	Total.	Average rate.	Quarantine began.	No. years quarantine.	Total.	Average rate.	Increase.	Decrease.	Per cent. of increase.	Per cent. of decrease.
Boston—1	1884-1903	10	9.87	.99	...	10	7.86	.78	...	.21	...	21.2
New York—2	1884-1903	6	42.57	4.26	1896	10	24.66	2.46	...	1.80	...	42.2
Providence—9	1881-1902	0	...	1.60	*1886	10	†19.54	1.63	.03	...	1.9	...
St. Louis—8	1884-1903	7	7.13	.71	...	10	5.26	.52	...	.19	...	26.7
Cincinnati—12	1882-1901	0	21.40	2.14	...	10	12.53	1.25	...	.89	...	41.6
Washington—13	1884-1903	2	21.30	2.13	...	10	8.79	.88	...	1.25	...	58.7
Baltimore—5	1882-1901	0	...	3.09	...	4	...	.73	...	2.36	...	76.3
Philadelphia—7	1884-1003	0	9.97	.99	...	9	10.04	1.00	.01	...	1.	...
London—14	1884-1903	0	60.85	6.08	...	...	56.01	5.60	...	.48	...	7.9
Berlin—4	1884-1903	0	21.75	2.17	...	...	13.02	1.30	...	.87	...	40.1
Vienna—10	1884-1903	0	52.63	5.26	...	...	46.79	4.68	...	.58	...	11.
Paris—11	1884-1903	0	53.07	5.31	...	...	29.41	2.91	...	2.40	...	45.2
Glasgow—16	1881-1900	0	68.84	6.88	...	...	80.24	8.02	1.14	...	16.5	...
Liverpool—17	1884-1903	0	88.34	8.83	...	...	46.93	4.69	...	4.14	...	46.8
Chicago—6	1885-1903	0	16.41	1.82	...	10	8.79	.88	...	.94	...	52.2
Brooklyn—3	1885-1903	0	15.69	1.74	1898	5	18.63	1.86	.12	...	6.9	...
Total				54.00	...	...	...	39.19	...	...	...	...
Average for 16 cities				3.37½	...	...	...	2.45	...	.92½	...	27.4

*Reported in 1886. †Total for 12 years.

TABLE I.—MEASLES.—AVERAGE ANNUAL RATE OF MORTALITY PER 10,000 INHABITANTS, IN 10 AMERICAN CITIES, BEFORE AND AFTER QUARANTINE OF DIPHTHERIA AND SCARLET FEVER.

City.	Date of quarantine.	Total before.	No. years.	Average before.	Total after.	No. years.	Average after.	Increase.	Decrease.	Rate per ct. increase.	Rate per ct. decrease.
Baltimore—5	1898	...	20	2.35	...	5	0.36	...	1.99	...	84.6
Boston—1	1879	127.31	38	3.35	26.74	25	1.07	...	2.28	...	68.1
Chicago—6	1894	16.41	9	1.82	8.79	10	0.88	...	0.94	...	51.6
Washington—13	1892	23.94	16	1.50	9.36	12	0.78	...	0.72	...	48.0
St. Louis—8	1887	15.72	14	1.12	10.07	17	0.59	...	0.53	...	47.3
Philadelphia—7	1895	13.66	15	0.91	4.72	9	0.52	...	0.39	...	42.8
Cincinnati—12	1892	43.7	20	2.18	12.5	10	1.25	...	0.93	...	42.7
New York—2	1888	40.50	8	5.06	46.65	16	2.91	...	...	...	...
	*1896	67.68	16	4.23	19.47	8	2.43	...	1.80	...	42.5
Brooklyn—3	*1898	25.57	14	1.82	8.75	5	1.75	...	0.07	...	3.8
Providence—9	†1886	...	30	1.19	...	17	1.82	.63	...	52.9	...
Total			192	20.47	...	118	11.45	...	...	...	...
Average for 10 cities			19.2	2.05	...	11.8	1.15	...	...	...	44.0

* Actually were quarantined and these are the rates used, but in the case of New York it should have been the rate in upper line, as corresponding to data for scarlet fever and diphtheria. However, makes very slight difference.

† Reported at this date.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, November 6, 1907.—The President, Dr. D. K. Shute, in the chair; about 45 members present.

An appropriation of $41.00 for half-tones for the "History" was granted.

Dr. D. S. Lamb presented specimens of (1), Cancer of the stomach; (2), Cirrhosis of the liver. Discussed by Drs. T. C. Smith, and Vaughan.

Cancer of stomach.—In this case there was a large cauliflower-like growth from the mucous side of the greater curvature, distinctly limited, and on the corresponding peritoneal side there was some contraction from adhesions and several small lymphatic nodes. The patient was a man 79 years old, who died of nephritis; no symptoms of stomach trouble.

Dr. T. C. Smith asked if any member present had ever seen a case of secondary cancer of the stomach. Primary gastric cancer is common enough, but the secondary variety must be very rare.

Dr. D. S. Lamb said that secondary gastric cancer is very rare by metastasis, but frequent by extension from a neighboring organ, especially the pancreas.

Dr. Vaughan had seen one case of metastatic gastric cancer, secondary to cancer of the breast; the symptoms developed one year after amputation of the breast.

Dr. Vaughan reported a case of ureteral calculus, with specimen. Discussed by Drs. D. S. Lamb and Hickling. See p. 476.

Dr. Ales Hrdlicka addressed the Society on "Sexual differences in the skull and other parts of the skeleton." Discussed by Drs. D. S. Lamb, Shute and A. F. A. King. See p. 433.

Wednesday, November 13.—The President, Dr. Shute, in the chair; about 75 members present.

Dr. S. S. Adams reported a case of typhoid fever, with death from obscure causes, with specimens. Discussed by Drs. Jas. D. Morgan and C. W. Richardson. See p. 425.

Dr. Loring read the paper for the evening: "Modern treatment of pterygium." Discussed by Drs. Butler, Hammett, R. S. Lamb, O. Wilkinson, E. L. Morgan, Kober, McKimmie, Shute and S. B. Muncaster. See p. 427.

Dr. Jack read a paper on "Some experiences with hyoscin, morphin and strychnin as surgical narcotics." Discussed by Drs. Jas. F. Mitchell, Stavely, Wellington, Snyder, Hasbrouck, Roy, Sprigg, R. S. Lamb, Jones, I. S. Stone, S. S. Adams, F. Leech, I. H. Lamb, Vincent and G. L. Magruder. See p. 470.

Wednesday, November 20.—The Vice President, Dr. W. K. Butler, in the chair; about 100 members present.

Dr. Sowers, for the Executive Committee, presented the following resolution of the committee:

"Dr. Hickling's motion, seconded by Dr. Kober, and carried: *Resolved*, That the Executive Committee of the Medical Society recommends to the Medical Society that all legislative matters now in the hands of the Executive Committee be turned over to the Committee on Legislation of the Medical Association, for their action, which Committee has recently been appointed at the request of the American Medical Association."

Dr. Franzoni moved that the resolution be adopted. Seconded. Dr. Mackall moved that action on the resolution be deferred for one week and that notice of the proposed resolution be given on the program cards. Carried.

The resignation of Dr. Kober from the Executive Committee was accepted.

Dr. D. S. Lamb presented the following specimens: 1, Ovarian cyst, showing hemorrhage from twisted pedicle; 2, Ectopic pregnancy; 3, Procidentia uteri. Discussed by Dr. Bovée.

Dr. Bovée had removed the specimens presented by Dr. Lamb, and reported the cases as follows:

Ovarian cyst with twisted pedicle—From a woman 55 years old. The tumor had been developing for six years. She came to the hospital, the diagnosis was made, but she declined operation and went back to her home in Virginia. A few days before operation she felt acute pain in the lower right abdomen, simulating that of appendicitis. She was readmitted to the hospital, and the tumor was found high in the abdomen, with the uterus and vagina beneath. As the leucocyte count was low, appendicitis was excluded. The operation revealed the specimen, with the pedicle twisted about 58 degrees, the tumor adherent to neighboring structures, with collateral circulation being established through the adhesions. The hemorrhage into the tumor wall was well marked. She made a good recovery.

Ectopic pregnancy.—An interesting feature was that the patient had not missed a period, the pregnancy being not beyond three weeks duration. She had been seized with sudden pain, a physician seeing her two hours later; after 36 hours' observation, her condition having progressed unfavorably, he sent her to the hospital; she was pulseless at the wrist, color lardaceous, gasping for breath, abdomen distended, extremities cold; pelvic examination negative. The only diagnosis made was intra-abdominal hemorrhage, with the natural inference that it was probably from an ectopic pregnancy. She was operated upon immediately; on opening the abdomen, much fluid and coagulated blood escaped; one enlarged appendage was quickly removed. She died 24 hours later. The hemorrhage was remarkably profuse to have occurred so early in the pregnancy.

Procidentia uteri.—From a woman, multipara, 56 years old; for fifteen years the uterus had protruded from the vulva. The only thing advisable was done, namely, hysterectomy, with clos-

ure of the outlet. This was done by performing anterior and posterior colporrhaphies with perineorrhaphy, forming a central column in the vagina for the support of the pelvic contents. She made a good recovery. The conservative opinion has come to advocate hysterectomy in these cases. It is illogical to attempt to hold such a large and useless organ in the abdomen by the natural supports. The uterus was large and contained fibroids; ovaries large, fibrous.

Dr. Harrington reported a case of abdominal aortic aneurysm, with specimen. See p. 477.

Dr. Jas. F. Mitchell read the paper for the evening: "Surgery of the blood vessels, with special reference to the treatment of aneurysm." Discussed by Drs. Jack, J. Ford Thompson, D. S. Lamb and Reyburn.

Wednesday, November 27.—The President, Dr. Shute, in the chair; about 65 members present.

Dr. Jas. Dudley Morgan reported a case of infective cerebrospinal meningitis, and presented the brain from this patient. Discussed by Drs. S. S. Adams, J. P. Miller, Jelliffe and Claytor. See p. 455.

Dr. Flexner's serum for Ep. cerebrospinal meningitis was mentioned in the discussion, and on motion of Dr. S. S. Adams the Secretary was directed to write to Dr. Flexner and ask how the serum could be obtained by Washington physicians.

Dr. Hickling read a "Review of neurology." Discussed by Drs. Wm. A. White, Jelliffe, S. S. Adams, Jas. D. Morgan, Mackall, P. C. Hunt, Claytor, Randolph, Vaughan and S. Ruffin. See p. 459.

Wednesday, December 4.—The President, Dr. Shute, in the chair; about 75 members present.

Dr. A. F. A. King offered the following as a substitute for the resolution of the Executive Committee offered at the meeting of Nov. 20: "*Resolved*, That the Executive Committee of the Society, to which was referred certain legislative matters now pending before the United States Congress, be and is hereby directed to suspend for the present any further consideration of said legislative matters until otherwise instructed by the Society." The resolution was adopted.

Dr. W. W. Wilkinson read a "Review of internal medicine." Discussed by Drs. Lee, Claytor, Randolph, Wm. A. White, Kober, Jas. D. Morgan, Hagner, Fremont-Smith, A. F. A. King, Roy, Mackall, Reyburn, Nichols and S. S. Adams. See p. 438.

Wednesday, December 11.—The President, Dr. Shute, in the chair; about 80 members present.

The resignation of Dr. Sowers from the Executive Committee was accepted, with the expression of the Society's appreciation

of the valuable services rendered it by Dr. Sowers, and of its regret at his withdrawal from the Committee.

A letter from Dr. Simon Flexner, giving directions for obtaining and using the antimeningitis serum, was read. See p. 456.

A letter from the Surgeon General of the Army, replying to an inquiry addressed to him by the President, was read, stating that it is deemed impracticable to open the library of the Surgeon General in the evenings.

Dr. Jas. Stuart reported a case of influenza meningitis, and presented the brain removed at autopsy. Discussed by Drs. Prentiss Willson, W. W. Wilkinson and Wall.

Dr. Wall read the essay for the evening: "Chorea." Discussed by Drs. Hickling, Wm. A. White, Williams, Acker, Taber Johnson, Fremont-Smith and J. D. Thomas. See p. 479.

The report of the Public Health Committee was read by title, ordered to be printed, and to be discussed at the next regular meeting. See p. 496.

Wednesday, December 18.—The President, Dr. Shute, in the chair; over a hundred members present,

Dr. Nichols, Vice President, took the chair and the President delivered his annual address: "The philosophical foundations of charlatanry in medicine," at the close of which, a rising vote of thanks was given. See p. 411.

The society then adjourned *sine die*.

WASHINGTON MEDICAL ANNALS.

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EDITORIAL COMMITTEE.

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Murray Galt Motter, A. M., M. D., . . . 1841 Summit Place.

Editorial.

ATWATER ON MEAT AND ALCOHOL.

Under the above title, *Modern Medicine* of December, 1907, discusses the work and results of Atwater and Chittenden. Perhaps the most interesting and striking feature of the discussion is the comparison between the two men.

Atwater criticises the excessive use of both alcohol and meat as injurious to health, "only it takes more meat to constitute excess." Nevertheless, he maintained that proteids, especially in the form of meat, should be used in considerable quantity, nearly three times as much as Chittenden's experiments found to be necessary. *Modern Medicine* adds that Atwater's stroke of apoplexy, his mental collapse and his prematurely ended career, demonstrate the falsity of his teaching; while on the other hand, Chittenden demonstrated the contrary, and illustrates the truth of it in the fact that although past the meridian of life and a man of slight physique, he can still do prodigies of work and apparently every year grows younger and more vigorous under the rejuvenating influence of the low proteid diet which his experiments led him to adopt for his own dietary.

Further, *Modern Medicine* claims that the free use of flesh food creates an appetite for alcohol, and that this is due to the fact that the uric acid, creatinin, etc., of the meat raise the blood pressure, while alcohol diminishes the pressure, and is thus antagonistic. A large meat diet causes headache and other symptoms due to the high blood pressure, and alcohol relieves or

prevents these symptoms. The same journal adds that smoking raises the blood pressure, and quotes a patient as saying that on a meat diet he smoked twenty to thirty cigars a day; but on a diet without meat he could smoke only a part of a cigar two or three times a day; that if he ate a meat dinner and drank champagne or whisky he could smoke as many cigars as he chose.

TUBERCULOSIS.

The Report of the Phipps Institute, Philadelphia, shows that of the cases treated during the last three years 58.92 per cent. were native born. Of the foreign born the men numbered nearly twice as many as the women. For 1905–6 there were 655 foreign born; of these 223 were Celtic, 185 Teutonic, 110 Jews, 27 Latins, 22 Slavs, 55 mixed and 33 negro.

Tuberculosis is very prevalent among the Hebrews, but rarely takes on a fatal form.

Of 1,540 cases in two years 1,130 at least changed their residence; this was due to "increased objection on the part of landlords to consumptive tenants. This constitutes a menace to public health and furnishes a strong argument in favor of registration of tuberculosis."

The ages, for three years, were as follows: 945 between 20 and 30; 899 from 30 to 40; 487 from 40 to 50; 369 from 10 to 20; 233 over 50; under 10, 57; of 9 no record of age.

Sex, for three years: male, 1,734; female, 1,265; total, 2,999. This agrees with reports the world over.

Married, 1,457; single, 1,227; widowed, 285; all others, 30; total, 2,999.

Color: white, 2,820; black, 184; all others, 5; total, 2,999. About 5 per cent. of the population of Philadelphia is colored, so that the mortality of the colored is relatively low; this is attributed to the fact that the colored sick are slow to seek relief.

Occupation: factory hands, 127; house workers, 688; laborers, 156; mechanics, 116; school children, 115. This is the record for three years.

More than half had other persons dependent on them.

Of the 2,999, 525 had had typhoid fever; 733, pleurisy; 562, pneumonia.

Over 25 per cent. of the cases of tuberculosis of the last year had spinal curvature.

The sputum should be disposed of immediately when given off, in such a way that nothing is contaminated.

It is generally accepted that the tubercle bacillus gains entrance into the organism through the lymphatic system.

Of 2,999 cases the apex of the right lung was affected in 1903, the left in 73; 418 were undetermined.

Of the 2,999 cases 1,570 were of less than 2 years' duration; 943, 2 to 5 years'; 329, 5 to 10 years'; 201, 10 to 20; 48, over 20 years'; no record in 108.

In 1,540 cases there was an accentuated pulmonic sound in 664, accentuated aortic second sound in 381, arteriosclerosis in 184, dilated right heart in 134.

The pulse was relatively higher than the temperature.

Clubbed fingers in 195 cases, curved nails in 287, a few not recorded; total, 655.

Of 2,999 cases 509 had edema.

There was hemoptysis in 1,459 out of 2,999; 1,816 cases of night sweats in 2,999; 1,092 cases of pain in 1,540; the menses ceased in about one-third.

The weight tables show that of 2,999 cases 1,245 showed a gain in weight while under treatment, "and with the general improvement there undoubtedly is some arrest of the progress of the disease." Nearly 50 per cent. of all the cases improved. Of the 2,999, in 31 the disease was arrested, 1,089 improved, 978 did not improve, 304 died, 597 were lost sight of. It was difficult to keep track of those who no longer attended the dispensary.

Albuminuria was found in 269 out of 1,035 cases.

The Maragliano serum did not give satisfaction.

Tubercular larynx was observed in 218 out of 680 cases.

PRINTING THE "ANNALS."—For the information of members of the Society who are not familiar with the several stages through which a "paper" passes to be printed in the ANNALS, the following statement is made:

The "paper," or "article" as it is generally called, is known to the printer as "copy." This copy, to be readily read, should be typewritten. All the prominent journals and magazines *re-*

quire that the contributions to their pages be typewritten, and absolutely refuse to accept manuscript. Mistakes inevitably occur in printing from manuscript, and mistakes mean increased cost to pay for corrections. This increased cost is the main reason why the committee on publication is disposed to insist on papers being typewritten.

The "copy" as received by the editor is carefully examined by him as to its accuracy, clearness, grammatical construction, spelling, etc. So far as this journal is concerned, there is no attempt at interference with the individual style of literary work of an author.

The printer "sets up" the copy and returns it to the editor, accompanied by duplicate "galley proofs." The editor sends the copy and one galley proof to the author, whose function it is to compare the two, and after making necessary corrections, and no other changes than are absolutely necessary for accuracy and clearness, returns the proof to the editor, retaining the "copy." The author should clearly understand that the printer has a regular schedule of charges for making corrections, additions or alterations; this work is not done gratuitously; and when an author strikes out a paragraph or any portion of a galley, as is sometimes done, the cost of printing that part is so much of the money of the Society thrown away.

The editor examines the galley returned to him and also the duplicate, making his own corrections and passing on the corrections and other changes of the author, and returns the galley to the printer, who then proceeds to make the galleys up into pages, and sends duplicate "page proofs" to the editor. The author does not see any more of the printing, however, until the final issue; but the editor examines the page proof to note any errors that may have escaped the first examination. The page proof is then returned to the printer, who makes up a "form" of usually 16, sometimes 8 pages, and proceeds to print off the number required for the "edition." At present the Society is issuing an edition of 525 to cover the needs of members and exchanges, and to leave a small reserve for future needs.

When the "form" is made up and the printing of the edition begins, no change can be made in the subject matter without causing much trouble and expense. *The reason why some corrections do not appear in papers and discussions is that they are not*

received in time. All such corrections have due consideration if received before the proof passes into the "form."

Whenever an author desires reprints of his article he should notify as promptly as possible the printer or editor, as the case may be; otherwise he may not get them if he has delayed his notification until the edition has been printed off and the printer has distributed his type. The only way then to get reprints would be for him to pay for having the whole matter set up again at the original cost. It may be remarked in passing that the cost of ten or a hundred reprints is about the same, the additional cost of time, labor, paper and ink being small.

A word concerning punctuation. In this city the rules followed in printing, including construction of sentences, punctuation and spelling, are mainly those adopted by the Government Printing Office. The editor therefore usually leaves that matter to the printer.

Exchanges Received.

Annals of Gynecology and Pediatrics.
Buffalo Medical Journal.
Colorado Medicine.
Cronica Medica Mexicana.
Illinois Medical Bulletin.
Journal Michigan Medical Society.
Journal Kansas Medical Society.
Journal Medical Society New Jersey.
Louisville Monthly Journal Medicine and Surgery.
Maryland Medical Journal.
Modern Medicine.
Northwest Medicine.
Pacific Medical Journal.
Providence Medical Journal.
Texas State Journal Medicine.
West Virginia Medical Journal.

Publications Received.

United States Medical Bulletin, October, 1907.

Third Annual Report Phipps Institute for Study of Tuberculosis, Philadelphia, 1905–6.

G. L. Magruder, "Milk Supply of Washington"; reprint.

Annual Report Surgeon General U. S. Navy, 1906–7.

"Trachoma"; report of U. S. P. H. and M. H. S., 1907.

Charles Dennison, "The Sleeping Canopy."

J. W. Bovée, "Should the ovaries be removed when hysterectomy or removal of the body of the uterus is done"; reprint, 1907.

J. W. Bovée, "The status of the fight against cancer of uterus"; reprint, 1907.

J. W. Bovée, "Hysterectomy and removal of body of uterus"; reprint, 1907.

G. T. Vaughan, "Inflammation of gallbladder and gall ducts"; reprint.

A NEW BOOK has appeared from the pen of one of our members, Dr. James Foster Scott, entitled "The Sexual Instinct; its Uses and Dangers as affecting Heredity and Morals." Published by Treat & Co., New York.

PHOTOGRAPHS OF MEMBERS.—As has already several times been stated, the Committee on History wishes it clearly understood by the members of the Society that neither the Committee nor the Society has any sort of arrangement or agreement with any photographer in regard to photographing anybody or making groups of any persons. The sole interest of the Committee in the matter is to get the gift or loan of the photographs of members in order that groups may be made for use in the projected "History."

THE MEDICAL COLLEGES IN THE DISTRICT OF COLUMBIA.—The report of the Medical Examining Board of the State of Washington for the eighteen years, 1890 to 1907, inclusive, shows that during that time there were examined 11 graduates of Georgetown Medical School, with 2 failures; George Washington Medical School, 8 applicants, with 2 failures, and Howard Medical School, 6 applicants, with 1 failure.

THE MEMBERS ELECTED in October last are requested to send to Dr. D. S. Lamb, Chairman of the Committee on History, 2114 18th St., N. W., the following personal information: Full name (as John Paul Jones); date and place of birth; year and institution from which any degree (A. B., M. D., &c.) has been re-

ceived ; service in Army, Navy or Marine Hospital Corps ; and any other matter of civic or medical interest in their lives. It is also desired that the photographs of these new members be sent to the same address ; such as are requested will be returned after being used.

Bureau of Public Health and Marine-Hospital Service.—A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine Hospital Service, 3 B Street, S. E., Washington, D. C., Monday, January 20, 1908, at 10 o'clock A. M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

Medical Miscellany.

Washington Obstetrical and Gynecological Society.—December 20, 1907, Dr. J. F. Moran read a paper on "Pyloric stenosis in infancy." He mentioned the first cases recorded, namely that of Beardsley in 1788, Williamson in 1841 and Kawoski in 1842. Hirschsprung was the first to describe the condition, which has been demonstrated to be due to hyperplasia of the circular fibers, occasionally the longitudinal fibers and the connective tissue being affected. Sometimes there is dilatation of the stomach ; sometimes catarrhal gastritis ; sometimes the condition is associated with other abnormalities ; sometimes several infants of the same family are affected. Various theories have been advanced as to the cause of the hyperplasia. Dr. Moran considered the symptomatology and diagnosis, prognosis and treatment. The latter is both medical and surgical. He reports a case that came under his own observation, and concludes, from a study of the literature of the subject, that the symptoms may be due either to hyperplasia, as stated, or to simple spasm ; the hyperplasia being congenital, while the spasm originates after birth. There are cases which seem to be due to partial stenosis with secondary spasm. The spasm may be due to a neurosis, an erosion of mucosa or to gastritis. The treatment must be determined by the exigencies of the individual case.

Health Department, District of Columbia.—

Memorandum showing the relative prevalence of certain contagious diseases in the District of Columbia from June 1 to December 31, 1906, and the same period of 1907.

The Act requiring cases of measles, whooping cough, chicken-pox and epidemic cerebro-spinal meningitis to be reported to the Health Department was not put into operation until after April 8, 1907, hence the inability to give a comparative statement of cases of these diseases for the 1906 period.

DIPHTHERIA.

1906.			1907.		
Cases on hand June 1	7		Cases on hand June 1	7	
Cases reported from June 1 to Dec. 31	222		Cases reported from June 1 to Dec. 31	272	
Cases discharged, recoveries		187	Cases discharged, recoveries		220
Cases discharged, deaths		17	Cases discharged, deaths		21
Cases on hand Dec. 31		25	Cases on hand Dec. 31		38
Total cases	229	229	Total cases	279	279
*Per cent. of fatal cases		8.33	*Per cent. of fatal cases		8.71

SCARLET FEVER.

1906.			1907.		
Cases on hand June 1	45		Cases on hand June 1	11	
Cases reported from June 1 to Dec. 31	87		Cases reported from June 1 to Dec. 31	66	
Cases discharged, recoveries,		111	Cases discharged, recoveries		48
Cases discharged, deaths		3	Cases discharged, deaths		1
Cases on hand Dec. 31		18	Cases on hand Dec. 31		28
Total cases	132	132	Total cases	77	77
*Per cent. of fatal cases		2.63	*Per cent. of fatal cases		2.04

TYPHOID FEVER.

1906.			1907.		
Cases on hand June 1	48		Cases on hand June 1	48	
Cases reported from June 1 to Dec. 31	981		Cases reported from June 1 to Dec. 31	759	
Cases discharged, recoveries,		830	Cases discharged, recoveries		607
Cases discharged, deaths		133	Cases discharged, deaths		85
Cases on hand Dec. 31		66	Cases on hand Dec. 31		115
Total cases	1029	1029	Total cases	807	807
*Per cent. of fatal cases		13.81	*Per cent. of fatal cases		12.28

SMALLPOX.

1906.			1907.		
Cases on hand June 1	27		Cases on hand June 1	0	
Cases reported from June 1 to Dec. 31	8		Cases reported from June 1 to Dec. 31	6	
Cases discharged, recoveries,		34	Cases discharged, recoveries		4
Cases discharged, deaths		1	Cases discharged, deaths		0
Cases on hand Dec. 31		0	Cases on hand Dec. 31		2
Total cases	35	35	Total cases	6	6
*Per cent. of fatal cases		2.86	*Per cent. of fatal cases		00

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

From June 1, 1907, to December 31, 1907.

Measles.			Whooping Cough.		
Cases on hand June 1, 1907,	77	.....	Cases on hand June 1, 1907,	84	.....
Cases reported from June 1 to Dec. 31	379	.....	Cases reported from June 1 to Dec. 31	160	.....
Cases discharged, recoveries	.....	446	Cases discharged, recoveries	.....	148
Cases discharged, deaths	.....	4	Cases discharged, deaths	.....	11
Cases on hand Dec. 31, 1907	.....	6	Cases on hand Dec. 31, 1907	....	85
Total cases	456	456	Total cases	244	244
* Per cent. of fatal cases	.....	.89	* Per cent. of fatal cases	.....	6.92

Chickenpox.			Epidemic Cerebro-spinal Meningitis.		
Cases on hand June 1, 1907,	63	.....	Cases on hand June 1, 1907,	1	.....
Cases reported from June 1 to Dec. 31	281	.....	Cases reported from June 1 to Dec. 31	6	.....
Cases discharged, recoveries	.....	200	Cases discharged, recoveries	.....	1
Cases discharged, deaths	.....	.....	Cases discharged, deaths	.....	5
Cases on hand Dec. 31, 1907	.....	144	Cases on hand Dec. 31, 1907	.....	1
Total cases	344	344	Total cases	7	7
* Per cent. of fatal cases	.....	.....	* Per cent. of fatal cases	....	83.33

* The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

The large percentage of fatal cases of whooping cough is due to the fact that all fatal cases of this disease are necessarily promptly reported, while cases that recover can and do run their course, in some instances, without being reported to the Health Department or being discovered by it.

W. C. Woodward.

Medical Association of the District of Columbia.—An adjourned meeting was held December 17, 1907, for the purpose of considering certain amendments to the Regulations which had been proposed by the committee on revision, with a view to making the Regulations conform with the organization of the American Medical Association. It was agreed to hold four stated meetings each year instead of two, as formerly; the meetings to be on the fourth Tuesday of January, April, June and October. The fee list was abolished.

Probably the most important amendment adopted was the following: "The Committee on Public Policy and Legislation shall consist of nine members and the President and Secretary. When instructed, it shall represent the Association in securing and enforcing legislation in the interest of public health and of scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall strive to organize professional influence so as to promote the general good of the community in local and national affairs." The present committee, consisting of Dr. John D. Thomas, Chairman, Drs. S. S. Adams, T. N. McLaughlin, J. B. Nichols, F. R. Hagner, G. Brown Miller, Louis A. Johnson and the President and Secretary, was instructed to continue its work under the authority of the above amendment.

An amendment was adopted providing for the election of three Counselors annually, to serve three years, thus making the nine Counselors a continuous body. Numerous other amendments of a minor character were adopted. It was also agreed to publish the revised Regulations with a historical roster of members. Under the revised Regulations, a regular stated meeting will be held January 28, 1908. L. H. REICHELDERFER.

Society of Nervous and Mental Diseases of Washington.— The Committee appointed to make a report on the care of the insane in the District of Columbia reported as follows, December 3, 1907 :

That the insane and those suspected of being insane are cared for in three institutions : the Government Hospital for the Insane, where they are received only upon commitment papers signed by the District Commissioners in accordance with the statute ; the Washington Asylum, where they are remanded for mental examination, and the District Jail, where a number of those are sent for mental examination whose actions have brought them within the purview of the criminal law. About 400 patients are admitted to the Government Hospital from the District each year. About 200 patients have their mental condition passed upon each year at the Washington Asylum, and 25 are examined annually in the jail. Of the 200 patients examined at the Washington Asylum about 150 are sent to the Government Hospital, and of the 25 examined at the jail about 12 are sent to the Government Hospital. This would show that about 162 cases are sent there from the Washington Asylum and jail each year, leaving 238 patients from other sources. The total number of insane persons, therefore, examined annually in the public institutions of the District is approximately 500.

The Committee was familiar with the conditions in all these institutions and had no hesitancy in saying that the state of affairs with reference to the insane as it exists today in this jurisdiction is disgraceful, to say the least. The Washington Asylum is essentially a poor-house hospital that was not built for, and was never intended to receive, insane persons. Aside from this its capacity is taxed to take care of the needy sick other than the insane. The result has necessarily been that the insane have been crowded into small quarters where they can have little in the way of treatment, and where they are too frequently a source of disturbance to near-by persons who are seriously ill. Aside from this the Committee believes it to be contrary to the most enlightened humanitarian ideals of dealing with this unfortunate class to treat them within the shadow of the workhouse and the jail. It is hardly necessary to add that the sending of patients to the District Jail for mental examination has absolutely no warrant whatever. The jail has no facilities for dealing with such patients,

and certainly no insane person, or person suspected of being insane, should be confined within the precincts of a jail unless actually convicted of crime, or under indictment.

The solution of the above state of affairs rests in the ultimate erection of a pavilion for the care of this class of cases in conjunction with a general hospital. Inasmuch as the problem of the insane and the presumed insane previous to their commitment is essentially a municipal problem, the logical place for such a pavilion would be in connection with, and as a part of, a municipal general hospital. It would seem that by such a relation with the municipal general hospital the pavilion could do its greatest amount of good in the community, as it would no longer stand alone to attract attention to the various disagreeable features of its work, which, unfortunately, are apt to be more prominent than the other features, but it would be, as it were, in a wing of the general hospital, and the patients who were taken there, or applied there for relief, would go, not to an institution primarily known as one which dealt with insanity, but would go to the general hospital and there be assigned to a ward in the same way as any other general medical case applying for treatment. This is the ultimate solution of the problem of the immediate care of cases suspected of insanity, and the solution along the lines of development which have been going on in this branch of medical science. Such an institution would not only take care of the presumptive 500 cases per annum which pass in review in the District, but presumably would find a degree of usefulness in the community by extending its relief to many persons who would apply for treatment but would hesitate to seek relief if they had to be committed, and legally declared insane. The construction of such a pavilion, however, it would seem, is only a portion of a larger scheme, and as there are many crying needs to be fulfilled by the medical charities of the District it will probably be two or three years at least before it can be logically considered.

In the meantime conditions can be very materially bettered by the expenditure of an inconsiderable amount of money. At the time of removal of patients from the old poor-house to the new, considerable space was vacated in the old building. A year ago an appropriation of $3,000.00 was obtained for fitting up a portion of this space for additional accommodations for the Washington Asylum. It was expected to take care of some, if not all, of the insane there. This money has now been pretty well expended, or at least arrangements have been made for spending approximately all of it, but the sum has been found inadequate to meet the requirements of fitting up these quarters for the care of the insane. An additional appropriation of approximately the same amount, $3,000.00, would probably cover all the necessary items of equipment, including a hydrotherapeutic outfit. The building in which these quarters are located is well constructed, the rooms

large, light and well ventilated, and there is no reason why the suspected cases of insanity cannot receive here very excellent care pending their discharge or commitment. The completion of these quarters will require very little time, and when finished all of the suspected cases of insanity should be taken care of here, and all of the cases from the jail supposed to be insane.

The advantages of economy in this arrangement are twofold. Not only can present conditions be materially relieved in a short time and at small expense, but this method of relief will be just so much accomplished along lines of future development. If a municipal hospital is established, as presumably it must be within a very short period, all of the sick now cared for in the Washington Asylum will be transferred to that institution. The insane and suspected cases of insanity will also go there in the special pavilion provided for that purpose. This will leave the quarters above described vacant. They, however, would be most admirably adapted for the care, custody and treatment of inebriates, a class of unfortunates for whom at the present time there is practically no provision within this jurisdiction. With this plant already equipped it would seem that Congress could be readily induced to see the advantage of an Inebriates Act that would provide for the care and treatment of many of these cases.

A further advantage of the equipment of the almshouse as above would be that the quarters could be used not only for inebriates but for such suspected cases of insanity as might be confined in the jail under sentence or indictment. Such cases could be properly transferred to this building, which is only a few feet from the jail, and there not only be under observation, but receive proper treatment and at the same time be under sufficient restraint so that their escape would not be possible.

The Committee was of the opinion that, in addition to the matters covered thus far in the report, their instructions were sufficiently broad to include recommendations touching the matter of lunacy legislation. Up to February 23, 1905, the date of the present Act establishing a method of procedure in the matter of committing insane persons in the District of Columbia, commitment was had by Marshal's jury. No comment is needed upon this antiquated method, and it is now, fortunately, a matter of history.

While the Act of February 23, 1905, is a great improvement upon this old method of procedure, it has gone only a short way towards curing the defects of lunacy legislation in the District. The principal defect in the present method of procedure is the necessity for commitment in open court by inquisition before a jury. This is a great hardship both to the patient and his relatives. It is humiliating and cannot possibly do good, but on the contrary tends to harm by placing the unfortunate person accused of insanity in the same category as one accused of crime. In

fact the whole method of procedure is the method of the criminal court. If one were to attend these hearings and see the method in operation he would constantly be impressed with the fact that both by method of procedure and terminology employed the alleged insane person is placed on a par with the criminal. He is cited into court, accused of insanity upon an affidavit of lunacy, signed by two citizens in which they state that—

"If the insane person be permitted to remain at liberty * * the rights of persons and of property * * * will be jeopardized, the preservation of the public peace imperiled and the commission of crime rendered probable."

Nothing appears to indicate that the unfortunate insane person is committed to the institution for his own welfare, to be treated for the disease with which he is afflicted and if possible be restored to health and useful citizenship, the implication being that he is removed from the community because he is a dangerous element therein. The question of insanity is solely and absolutely a medical one to be solved by medical men, and there is no more sense in submitting such a question to a jury of laymen than there is in submitting the question of the existence of typhoid fever.

The Committee was of the opinion that the lunacy legislation of the District requires complete revision in such a way that relief may be extended to the insane because of their illness, rather than upon the basis of probable criminal acts, as under the present law. In the main, the law should provide that upon satisfactory medical evidence the court should be empowered to commit directly without public proceedings in open court. The safety of all parties concerned can be readily taken care of by providing, as the New York law does, for example, that a hearing before a jury can be had upon the motion of the alleged insane person, or a friend or relative on his behalf, or upon the court's own motion. Experience shows that only a small percentage of cases that pass in review take this method of procedure under such a law, and then only those that are probably harmed the least by the excitement incident to a public trial.

The Committee called particular attention to the fact that the time has never been more propitious for the enactment of new lunacy legislation. Until very recently every effort made along the lines above suggested has been crushed by the position, largely, of the District officials, who claim that any such change as suggested is unconstitutional, and cited legal decisions to support their view, particularly the decision some years ago in the District Court, "Bryant (3 Mackey, 489)," in which "due process of law" was defined as meaning "trial by jury." In a recent case, however, Justice Barnard handed down a decision, under date of February 16, 1907, in which he reviewed the whole situation, both as to the meaning of "due process of law" and

the constitutionality of certain questions involved. His opinion supersedes entirely the Bryant decision, and clarifies the entire situation. There is now nothing to prevent proceeding along the lines indicated, as this decision clearly shows why "due process of law" need not necessarily mean "trial by jury," and why a process other than trial by jury may be constitutional.

The Committee sums up its recommendations as follows: 1. The appropriation of $9,000.00 to complete and fit up quarters in the old almshouse for the immediate care of the insane and those remanded for mental examination. 2. The erection of a special pavilion for the care and treatment of cases of mental disorder in connection with, and as a part of, a general hospital. 3. The utilization of the quarters in the almshouse, after erection of the pavilion recommended in 2, for caring for inebriates, and the insane of the jail who are under sentence or indictment. 4. The passage of an Inebriates Act. 5. The revision of lunacy legislation. The report was signed by Wm. A. White, D. Percy Hickling, D. K. Shute and Presley C. Hunt.

Mortality in the District of Columbia in 1907.—The total number of deaths in the District of Columbia during the calendar year 1907 was 6,339, representing a general death rate of 19.23. The death rate during the preceding year was 19.35. The deaths among white persons numbered 3,629, equivalent to a death rate of 15.55, and showing a slight increase since the preceding year, when the corresponding death rate was 15.46. Among colored persons the number of deaths was 2,710, showing a death rate of 28.17, somewhat less than the corresponding death rate for 1906, which was 28.81.—W. C. Woodward.

Society of Ophthalmologists and Otologists.—Meeting November 15, 1907. Dr. J. J. Richardson reported a case in which a strong solution of *adrenalin chlorid* had been sprayed into the nose; there was marked turgescence and edema of the nose and pharynx. The tissues were punctured and iced, Dobell's solution and cocaine were used, and the symptoms subsided in eighteen hours. There must have been some idiosyncrasy in the case because the same solution of adrenalin acted normally in other cases.

Dr. Richardson also reported a case in which he dissected out both tonsils under cocaine, the bleeding was slight and the patient went home in half an hour, with instructions to use ice in case of oozing. Bleeding, however, began and was profuse for several hours; the doctor found a large clot in the right tonsillar cavity, under which was profuse capillary hemorrhage. This was controlled by *hydrogen peroxid*, morphin, and atropin and suprarenalin solution. He had repeatedly used hydrogen peroxid in hemorrhage in cancer of the throat, when other applications failed, and with success.

In the discussion on the first case, Dr. McKimmie said that he did not use the spray but used a swab. Dr. Bennett said that in one case in which he used the adrenalin chloride the patient *sneezed* afterward for 24 hours. In another case in which he did a tonsillectomy with the punch, there was slight hemorrhage which was controlled, but a few days afterward there was secondary hemorrhage which was so profuse that he had to give an enema of normal salt solution.

Dr. Polkinhorn reported a case of a white boy who had an alternating external *strabismus;* vision each 5-12ths; with glasses he had been wearing O. D. —1, equal to —0.50, cax. 180; O. S. —0.50 equal to —0.25 cax. 180; there was little improvement. When the right eye was closed the left turned out, and *vice versa*. The ophthalmoscope showed a peculiar arrangement of vessels, turning out markedly instead of passing up and down from the disc; he believed that the macula was excentric in each eye. Dr. Wilmer said that the condition might be congenital, a scotoma from coloboma of the choroid or a neuro-retinitis, or an atrophy of the choroid and retina at the macular region. There was undoubtedly a disturbance of the retinal elements. The fixation was excentric, and Dr. Polkinhorn was wise not to operate because the child did not have good central vision. Dr. Polkinhorn said that the child had been brought to him to ascertain if an operation would help, or if glasses would make the eyes straight; the doctor gave a negative answer to each. The child had had entero-colitis at nine months, after which, for the first time, the condition of the eyes was noticed.

Dr. R. S. Lamb read a paper on the *Treatment of injuries of the eye and its appendages*. In the discussion, Dr. Shute reported a case in which a physician by mistake put a drop of pure nitric acid instead of boric acid in each eye, but the eye was not injured, was now normal. In another case a nurse put hydrochloric acid in the eye by mistake; the patient, however, recovered without permanent injury. Dr. Griffith mentioned similar cases, the patients getting entirely well. Dr. Polkinhorn reported a case of instillation of hydrochloric acid without permanent injury, and another of plaster in the eye and the use of running water on the eye to alleviate and remove the particles of lime; he used castor oil and atropin with success. Dr. Dye spoke of the remarkable tolerance of the eyes. A few days before he had seen a man who had been kicked in the face by a horse, bursting the eye. The Doctor kept the eye clean and it was getting well. In another case a man had been injured, causing prolapse of the iris into the sclero-corneal wound and the lid was cut through, but the man could read J4. Dr. McKimmie mentioned the case of a boy of 16 who was struck by some lead from a mould that exploded; both eyelids and lashes were covered with the lead. The Doctor detached the casing after cutting the eyelashes, and,

except for the superficial burn and temporary loss of lashes, there was no disturbance of function. Also the case of a colored boy who had an abrasion of the eyebrow and splitting of both eyelids without injury to the eyes. Dr. Muncaster had had a case of burning with sulphuric acid that destroyed the superficial layers of the mucous membrane; the patient recovered under boric acid irrigation and instillation of olive oil, one drop every three hours. Dr. Newell referred to Noyes' treatment of penetrating wounds of the eye with aconite internally; in his own experience it had been very useful. Dr. Wilmer said that we must be very careful in handling cases of injury of the eye; burns from the acids were more superficial because the tears neutralized the outer surface of the droplets and only the upper epithelial layers were destroyed. He reported the case of a woman who refused operation for cataract; she was struck in the eye by another person's elbow, rupturing the eyeball and causing expulsion of the cataract. There was hemorrhage into the anterior chamber; this cleared up and she recovered vision. Dr. Lamb suggested that although the eyes were markedly tolerant of injury they were also very vulnerable, and reported the case of a colored boy who, while running, fell into a stump of a tree, striking his head so as to split both eyelids over one eye on a sliver of wood, but without injury to the eyeball; and another colored child who ran into a hot iron with the eye open, burning the cornea, which was quite white; but after the use for 24 hours of an ointment of cocain and argyrol, one could not say which cornea had been affected; there was no sign except the dilatation of the pupil from cocain.

Dr. McKimmie read a paper on *The after treatment of mastoidectomy*. Dr. Bryan said that he had had no experience with the blood-clot method, and most of those who had tried it, except Dr. Blake, of Boston, had given it up. He took exception to Dr. McKimmie's advice to use only the dry method. In cases where there was much discharge Dr. Bryan had found it impossible to clean the tenacious portions without irrigation. He advised rather tight packing in the first three or four dressings. Dr. Bennett said that granulations were often very slow in forming; in one case it was six weeks before there was any sign of granulation. He finally applied balsam of Peru, and then they formed but were never abundant, and a deep depression was left behind the ear. In a case of carcinoma of breast, together with mastoid disease, the patient was poorly nourished, and granulations did not appear till after seven weeks. Dr. Mason spoke of two cases in the New York Eye and Ear Infirmary, both of which were opened after operation and the broken-down clot removed; one had had septic infection, a radical mastoid operation and died. Dr. Dabney had noticed, a year and a half ago, in Vienna, that dry dressings were generally used, seldom irrigations. Dr. Griffith had not used the dry method until lately, and was surprised

that the patients did so well. He had tried the sterile gauze instead of iodoform, but had found an advantage in the liberation of iodine from the iodoform, the free iodine acting as an antiseptic. Dr. McKimmie agreed with Dr. Bryan that occasionally irrigation was an advantage in the conditions described by Dr. Bryan; but after the discharge had lessened, the dry method caused more rapid healing. In regard to iodoform gauze the iodin, if used after the first or second dressing, prevented proper granulation by destroying the superficial epithelial layers.—R. S. LAMB.

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